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REPORTED ASTHMA

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A

Section A

REPORTED ASTHMA

Overview of Asthma Care at School

- 1. Use *health forms, emergency cards, sports physical forms*, and medications brought to school to identify children with asthma who will be attending school.**
- 2. Complete *Authorization for Asthma Care at School* for students identified with asthma.**
- 3. Identify students who require *Needs Assessment & School Asthma Action Plans*:**
 - a. Students who have been hospitalized for asthma-related problems in the last three years
 - b. Students who have required urgent or emergency care due to asthma in last three years
 - c. Students who take medication daily to control asthma
 - d. Students who have used asthma medications in the past year
 - e. Students who will be using asthma medications at school
- 4. Arrange a meeting with the student and parents/legal guardian to complete the *Needs Assessment Form and the School Asthma Action Plan* (may be a telephone interview):**
 - a. Identify student's current health status and asthma management activities at home
 - b. Evaluate parental need for education & concerns about child's health & safety
 - b. Identify expectations for asthma care at school (classroom, PE, & field trips)
 - c. Determine specific services student will require at school
 - d. Identify equipment and supplies the child will require during the school day.
 - e. Evaluate student need for education, training, and support
 - g. Obtain written consent from parent/legal guardian to provide asthma services at school
 - h. Obtain consent from parent/legal guardian to communicate with healthcare providers
- 5. Inform appropriate staff about child's *School Asthma Action Plan & Emergency Plan*:**
 - a. Document asthma training activities for staff providing asthma services
 - b. Monitor & supervise health staff in performance of asthma care
 - c. Identify & prepare school personnel involved in care of child at school
 - d. Provide asthma care in-service for teachers and school staff
 - e. Update staff who need to know if students' asthma care plans change
 - f. Determine if staff CPR dates are current. If necessary, arrange training
- 6. Assess need & provide asthma education to children with asthma and their parents**
- 7. Include the *School Asthma Action Plan* as part of the child's *IEP* or *504 Plan***
- 8. Participate in community-wide efforts to increase asthma awareness & improve care**
- 9. Evaluate school asthma services and develop an annual plan to improve care**
- 10. Use a coordinated school health approach for addressing asthma**

Authorization for Asthma Care at School

(date)

Dear _____:

According to school health information, your child _____ has been identified as having a history of asthma. In attempting to better meet your child's needs at school, I ask that you complete the enclosed form. This form enables school health personnel to administer needed medication to your child at school, as determined by your child's health care provider. It also enables the appropriate treatment of your child's asthma during an emergency situation.

If no medications are needed at school, you may **skip to** the middle of the next page and complete only the lower half of the page, beginning with the section for allergies. Please be certain to answer the three questions indicated with an asterisk (*), as this will help us to determine the severity of your child's asthma.

Please sign and return the form to school with your child. If medications are needed at school and/or if you have answered yes to any of the questions preceded by an asterisk, please call me at _____ to discuss your child's asthma care further. I look forward to working with you and your child.

Sincerely,

school nurse

AUTHORIZATION FOR ASTHMA CARE AT SCHOOL

Student Name: _____ Teacher: _____

*Medications that have been prescribed for use at school may be administered by a school nurse or authorized staff member if: 1) the medication has been appropriately labeled by a pharmacist under the direction of a licensed health care provider 2) the parent or legal guardian has granted permission below for the specific medication to be administered at school (Please note that medications that have been duly prescribed for **self-administration** by a school-age minor child require completion of an "Asthma Medication Self-Administration Form" as set forth by the Missouri Safe Schools Act of 1996).*

Medication Name _____ **Dose** _____ **Time/Interval** _____
Route/inhalation device _____ **Instructions** _____

Medication Name _____ **Dose** _____ **Time/Interval** _____
Route/inhalation device _____ **Instructions** _____

Medication Name _____ **Dose** _____ **Time/Interval** _____
Route/inhalation device _____ **Instructions** _____

Allergies: list known allergies to medications, food, or air-borne substances _____

*Has the child been hospitalized for asthma-related problems in the last three years? _____ If so, when? _____

*Has this child required urgent or emergency care due to asthma in the last three years? _____ If so, when? _____

*Has the child been instructed to take a medication daily to control asthma? _____ If so, when? _____

***If the answer to any of these questions is yes, please call _____ to schedule a time to meet with the school nurse. A history and needs assessment form should be completed. An asthma action plan should also be on record with the school.**

I, the parent or legal guardian of the student listed above, give permission for administration of the above listed medications. I also grant permission for exchange of information with the health care provider to facilitate my child's asthma and allergy care.

Parent/Guardian:

Name: _____ Home Phone: _____

Address: _____ Work Phone: _____

Name: _____ Home Phone: _____

Address: _____ Work Phone: _____

Emergency Contacts:

Name: _____ Phone: _____

Health Care Provider: Name: _____ **Phone:** _____

Address: _____ **Fax:** _____

Signature of parent/legal guardian _____ **Date** _____

B

Section B

**ARE MEDICATIONS TO BE
USED AT SCHOOL?**

School Asthma History and Needs Assessment

Student Name: _____ **Teacher/Team:** _____

How long has your child had asthma? _____

What signs and symptoms signal a flare up of your child's asthma _____

Child's personal best peak flow number is _____

Green Zone (80-100% Personal Best) _____

Yellow Zone (50-80% Personal Best) _____

Red Zone (Below 50% Personal Best) _____

How many times has your child been taken to an ER due to asthma? _____ When? _____

How many times has your child been placed in the hospital due to asthma? _____ When? _____

How many days of school did your child miss due to asthma last year? _____

Describe any special care your child requires at school _____

Any dietary restrictions to follow at school _____

Describe the plan of care in the event of field trips, after-school activities and exercise _____

Equipment and Supplies Provided by Parents: _____ Daily Asthma Medications
_____ Emergency Asthma Medications
_____ Peak Flow Meter Supplies
(with mouthpiece)
_____ Spacer for Meter Dose Inhaler Use

Please list asthma and allergy medications that your child takes at home: _____

I rate my child's need for additional knowledge about asthma as:

0-None 1-Very Low 2-Low 3-Moderate 4-High 5-Very High (please circle one)

I rate my child's need to improve skills for self-management of asthma (use of inhalers, peak flow meters, symptom reporting) as:

0-None 1-Very Low 2-Low 3-Moderate 4-High 5-Very High (please circle one)

I rate my child's health problems related to asthma currently as (Optional: See Asthma Control Tool)

0-None 1-Very Low 2-Low 3-Moderate 4-High 5-Very High (please circle one)

I rate my level of concern about asthma posing a safety risk for my child at school:

0-None 1-Very Low 2-Low 3-Moderate 4-High 5-Very High (please circle one)

I rate MY need for additional asthma information as:

0-None 1-Very Low 2-Low 3-Moderate 4-High 5-Very High (please circle one)

Asthma Needs Score: _____ (sum of item scores)

Person Interviewed _____ Date _____

Signature of School Nurse _____ Date _____

School Asthma Action Plan

Student Name _____ Teacher/Team _____

1. Triggers that might start an asthma episode for this student:

- ☐ Exercise ☐ Animal Dander ☐ Cigarette smoke, strong odors ☐ Respiratory Infections
☐ Pollens ☐ Temperature Changes ☐ Foods _____ ☐ Emotions (e.g. when upset)
☐ Molds ☐ Irritants (e.g. chalk dust) ☐ Other _____

2. Control of the School Environment:

_____ Environmental measures to control triggers at school _____
_____ Pre-Medications (prior to exercise, choir, band, etc.) _____
_____ Dietary Restrictions _____

3. Peak Flow Monitoring

_____ Monitor Peak Flow:
 Personal Best Peak Flow _____ Monitoring Times _____
_____ Do Not Monitor Peak Flow

4. Routine Asthma and Allergy Medication Schedule

| Medication Name | Dose/Frequency | When to Administer | |
|-----------------|----------------|--------------------|-----------|
| | | At Home | At School |
| | | | |
| | | | |
| | | | |

5. Field Trips: Asthma Medications and supplies must accompany student on all field trips. Staff member must be instructed on correct use of the asthma medications and bring a copy of the Asthma Action Plan and Contact Phone Numbers.

1. Parent to Contact _____
Phone Number(s) _____
2. Other Person to Contact in Emergency _____
Phone Number(s) _____

Parent/Legal Guardian Signature _____ Date _____

Reviewed by the School Nurse _____ Date _____

School Asthma Quick Relief & Emergency Plan

****Immediate action is required when the student exhibits any of the following signs of respiratory distress. Always treat symptoms even if a peak flow meter is not available.**

| | | | |
|-----------------|--------------------------|--------------------------------|------------------------------------|
| Severe cough | Shortness of Breath | Sucking in of the chest wall | Difficulty walking from breathing |
| Chest tightness | Turning blue | Shallow, rapid breathing | Difficulty talking from breathing |
| Wheezing | Rapid, labored breathing | Blueness of fingernails & lips | Decreased or loss of consciousness |

Steps to Take During an Asthma Episode:

1. Give Emergency Asthma Medications As Listed Below:

| Quick Relief Medications | Dose/Frequency | When to Administer |
|---------------------------------|-----------------------|---------------------------|
| 1. | | |
| 2. | | |

2. Contact Parents if _____

3. Call _____ to activate EMS if the student has ANY of the following:

- Lips or fingernails are blue or gray
- Student is too short of breath to walk, talk, or eat normally
- No relief from medication within 15-20 minutes with any of the following signs
 - Chest and neck pulling in with breathing
 - Child is hunching over
 - Child is struggling to breathe

Parent Consent for Management of Asthma at School

I, the parent or guardian of the above named student, request that this School Asthma Action Plan be used to guide asthma care for my child. I agree to:

1. Provide necessary supplies and equipment.
2. Notify the school nurse of any changes in the student's health status.
3. Notify the school nurse and complete new consent for changes in orders from the student's health care provider.
4. Authorize the school Nurse to communicate with the primary care provider/specialist about asthma/allergy as needed.
5. School staff interacting directly with my child may be informed about his/her special needs while at school.

Parent/Legal Guardian Signature _____ Date _____
Reviewed by School Nurse _____ Date _____

C

Section C

**ARE MEDICATIONS TO BE
SELF-ADMINISTERED BY
THE STUDENT?**

Safe Schools Act Summary

Under the Safe Schools Act of 1996, children with asthma are able to self-administer life-saving medications.

In 1996 Governor Mel Carnahan signed into law the “Safe Schools Act.” Contained in this was an amendment the American Lung Association of Eastern Missouri advocated to assist families and schools who must deal with asthma. Because asthma is the number one reason for missed school days, many schools are challenged to assure children with asthma are able to participate fully in the learning process.

To self-administer asthma medication, children MUST have on file with the school:

- ◆ **Written authorization by the parent/guardian**
- ◆ **Medical history of the student’s asthma**
- ◆ **A written asthma action plan to address emergencies and the care of asthma while in school**
- ◆ **Written authorization from the prescribing physician that the child has asthma, has been trained in the use of the medication, and is capable of self-administering the medication**

If the above steps are followed, the school incurs no liability as a result of the child self-administering life-saving medication. Permission for self-medication must be renewed every school year.

<http://www.moga.state.mo.us/statutes/C100-199/1670000627.HTM>

Asthma Student Skills Checklist

Student _____ Age _____ Grade _____
School Nurse Signature _____ Date _____

Metered Dose Inhaler (MDI) Skills Checklist:

☐ **Requires Supervision**

☐ **Performs Independently**

1. Remove the cap to expose the mouth piece. Shake the inhaler gently back and forth.
2. Exhale fully to empty the air from your lungs
3. Place the inhaler up to your mouth and seal your lips around the mouth piece.
4. Press down on the medication as you start breathing in for 3-5 seconds.
5. Fill your lungs with the medication and hold your breath for 10 seconds. Then slowly breathe out.
6. Repeat steps 1-5 for each prescribed puff. Wait one minute between puffs.
7. Avoid exposing the MDI to extreme temperatures. Follow manufacturer's guidelines for care of the device.

Spacer/Chamber Skills Checklist: Type of Device _____

☐ **Requires Supervision**

☐ **Performs Independently**

1. Remove the cap and look for foreign objects.
2. Attach inhaler to device. Shake the chamber and MDI. Exhale fully.
3. Place mouthpiece in mouth (or mask on face).
4. Continue with steps 4-6 of the "Metered Dose Inhaler Skills Checklist" above.
5. Follow manufacturer's guidelines for care of the device.

Nebulizer Skills Checklist:

☐ **Requires Supervision**

☐ **Performs Independently**

1. Place the medication in the nebulizer cup.
2. Place the air compressor on a hard surface and turn it on. Look to see that mist is coming out.
3. If you use a mask, place the mask on your face covering both your nose and mouth. If you use a mouthpiece, put your lips around the end of it.
4. Take slow deep breaths until no mist comes from the mouthpiece.
5. Tap the cup to produce a little more mist.
6. Follow manufacturer's guidelines for care of the device.

Peak Flow Meter Skills Checklist:

☐ **Requires Supervision**

☐ **Performs Independently**

1. Return the marker to the bottom of the numbered scale.
2. Stand or sit up straight.
3. Take as deep a breath as you can.
4. Hold your breath while you place the mouthpiece in your mouth, closing your lips tightly around it.
5. Keep your tongue away from the mouthpiece as you blow out your air as fast as possible. The marker will move up the numbered scale indicating the air speed. Write down this number.
6. Repeat steps 1-5 two more times.
7. Record the highest of the 3 numbers.
8. Follow manufacturer's guidelines for care of the device.

Epinephrine Pen Trainer Skills Checklist:

☐ **Requires Supervision**

☐ **Performs Independently**

1. CONFIRM THAT LABEL STATES TRAINING DEVICE. Remove the gray safety cap.
2. Firmly hold the EpiPen with the black tip against the outer aspect of the thigh.
DO NOT PLACE YOUR THUMB OVER THE END OF THE DEVICE.
3. Push firmly and hold the EpiPen against the thigh for several seconds.
4. Replace the gray cap.
5. You may practice again.

ASTHMA MEDICATION SELF-ADMINISTRATION FORM

Student Name: _____ **Teacher:** _____

The Missouri Safe Schools Act of 1996 provides for students to carry and self-administer life-saving medications when the following criteria are met:

- 1) *Written authorization by the parent/guardian*
- 2) *Medical history of students asthma on file at the school*
- 3) *Written asthma action plan/individual healthcare plan on file at school*
- 4) *Written authorization from the prescribing health care provider that child has asthma, has been trained in the use of the medication and is capable of self-administration of the medication.*

MEDICATION NAME _____ **Dose** _____ **Time or Interval** _____

Route/Inhalation device _____ **Instructions** _____

MEDICATION NAME _____ **Dose** _____ **Time or Interval** _____

Route/Inhalation device _____ **Instructions** _____

ALLERGIES: list known allergies to medications, foods, or air-borne substances _____

I, the parent or legal guardian of the student listed above, give permission for this child to carry and self-administer the above listed medications. I have instructed my child to notify the school staff if one dose fails to relieve asthma symptoms for 3 or more hours. I understand that, absent any negligence, the school shall incur no liability as a result of any injury arising from the self-administration of medication by my child.

Signature of parent or legal guardian _____ **Date** _____

Parent/Guardian:

Name: _____ Home phone: _____

Address: _____ Work phone: _____

Name: _____ Home phone: _____

Address: _____ Work phone: _____

Emergency Contact:

Name: _____ Phone: _____

I, a licensed health care provider, certify that this child has a medical history of asthma, has been trained in the use of the listed medication, and is judged to be capable of carrying and self-administering the listed medication(s). The child should notify school staff if one dose of the medication fails to relieve asthma symptoms for at least 3 hours. This child understands the hazards of sharing medications with others and has agreed to refrain from this practice.

Signature of Health Care Provider _____ **Date** _____

Healthcare Provider:

Name: _____

Fax: _____ Phone: _____

Address: _____ City: _____ Zip: _____

D

Section D

PERSISTENT OR HIGH-RISK ASTHMA

Know Your Child's Rights

Students with asthma are covered under Title II of the American Disabilities Act of 1990, Section 504 of the Rehabilitation Act of 1973, and the Individuals with Disabilities Education Act (IDEA). Title II and Section 504 ensure access to federally funded services for any handicapped person. IDEA provides funds to help schools serve these students, when schools follow specific requirements.

Section 504 of the Rehabilitation Act of 1973 reads:

“No qualified handicapped person shall, on the basis of handicap, be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination under any program or activity which receives Federal financial assistance . . .”

“Handicapped persons means any person who . . . has a physical or mental impairment which substantially limits one or more major life activities . . . [such as] . . . breathing. . .”

Section 504 regulations require that schools follow procedures to safeguard the rights of parents, students, and school employees and ensure that decisions and their implementation regarding a child's needs are fair and appropriate. These regulations also require that schools and parents act as partners in the planning and decision making involved in the child's welfare.

State and local Boards of Education have resource staff who can provide specific guidelines. For more information, contact the U.S. Department of Education Office for Civil Rights, 800-421-3481; www.ed.gov/offices/OCR/.

Source: Allergy & Asthma Network Mothers of Asthmatics (2003).
Available online at: http://www.aanma.org/schoolhouse/sh_knowchildrights.htm

ASTHMA CONTROL TOOL

Student: _____

Date: _____

If you have been told you have asthma, this simple test from the American College of Allergy, Asthma & Immunology will help you decide if your asthma is well controlled. Check items that describe your experience of asthma. (Ask your parents to help.) If you checked several items it is likely that your asthma is NOT well controlled. Discuss these concerns with your health care provider. Adjustments in your medications and action plan should eliminate these problems.

Activities

- ☐ When I walk or do simple chores, I have trouble breathing or I cough.
- ☐ When I perform heavier work, such as walking up hills or stairs or doing chores that involve lifting, I have trouble breathing or I cough.
- ☐ Sometimes I avoid exercising or taking part in sports like jogging, swimming, tennis or aerobic activities because I have trouble breathing or I cough.
- ☐ Sometimes I am unable to sleep through the night due to coughing or breathing problems.

Symptoms

- ☐ Sometimes I can't catch a good, deep breath.
- ☐ Sometimes I make wheezing sounds in my chest.
- ☐ Sometimes my chest feels full or tight.
- ☐ Sometimes I cough a lot.

Triggers

- ☐ Dust, pollen, and pets make my asthma, cough, or breathing worse.
- ☐ My asthma gets worse in cold weather.
- ☐ My asthma gets worse when I'm around tobacco smoke, fumes, or strong odors.
- ☐ When I catch a cold it often goes to my chest.

Hospital Visits

- ☐ I made one or more emergency visits due to asthma or breathing problems in the last year.
- ☐ I stayed overnight in a hospital due to asthma or breathing problems in the last year.

Medication Problems

- ☐ I use my quick reliever inhaler to stop asthma symptoms more than 2 days a week.
- ☐ Sometimes I don't take my medication because I dislike it or it makes me feel bad.
- ☐ My asthma medicine doesn't really control my asthma.

Anxieties

- ☐ My asthma or breathing problems control my life more than I would like.
- ☐ I feel tension or stress because of my breathing problem or asthma.
- ☐ I worry that my breathing problem or asthma affects my health or may even shorten my life.

Report on Student Asthma Status in School

as observed by school nurse and other staff

Student _____

Teacher/Team _____

School _____ Date _____

The following behaviors, activities, and symptoms were observed by the school nurse and/or other staff members with regard to the above named student:

This student:

required quick relief medication of _____ on _____
the child's response was _____

appears to be requiring more relief medications:

more than once a week

more than 3 times a week

does not appear to be responding to relief medication at usual doses

requests a visit to the school nurse more than once a week

has been absent from school more than ____ time(s) in the last month

has exhibited or reported the following symptoms in the past (2) weeks:

coughing spells

wheezing

chest tightness

shortness of breath

being unusually tired or sleepy

sleep disturbance due to asthma

falling peak flow readings of _____

We encourage you to contact your child's health care provider because your child's condition appears to be not well controlled at this time. Please call the school nurse at _____ if you have any questions or concerns. Please sign this note and return it to school with your child, so we will know that you have received this important report on your child's health.

Sincerely,

school nurse

Parent Response _____

Parent Signature _____

Asthma Case Management Form

School District _____

Annual intensive case management summary for nurse case manager

School year _____ School _____ School Nurse _____

Race (circle) Asian Black Hispanic White Other

Student Name _____ ID # _____

Gender _____ Date of Birth ____/____/____ Primary Health Care Provider _____

Allergist/Pulmonologist _____ Date of Asthma Action Plan _____

| Severity | |
|--|--|
| Severity established by: <input type="checkbox"/> Doctor <input type="checkbox"/> School Nurse <input type="checkbox"/> Not Established | |
| Asthma Severity: <input type="checkbox"/> Mild Intermittent <input type="checkbox"/> Mild Persistent <input type="checkbox"/> Moderate Persistent <input type="checkbox"/> Severe Persistent <input type="checkbox"/> Exercise Induced | |
| Known Allergies: <div style="border: 1px solid black; height: 40px; margin-top: 5px;"></div> | |
| Known Triggers (circle): Dust mites, molds, pollens, feathers, animal dander, cockroaches, cold, exercise, colds, chemicals, sinus infections, cigarette smoke, exhaust, foods, yelling, crying, laughing, other _____ | |
| Current Treatments | |
| Takes control medication at home or school: <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Quick relief medication (e.g. Albuterol): <div style="display: flex; justify-content: space-between;"> <input type="checkbox"/> At home <input type="checkbox"/> At school <input type="checkbox"/> None </div> | |
| Self-carry: <input type="checkbox"/> At home <input type="checkbox"/> At school <input type="checkbox"/> None | |
| Peak flow: <input type="checkbox"/> At home <input type="checkbox"/> At school <input type="checkbox"/> None | |
| Spacer: <input type="checkbox"/> At home <input type="checkbox"/> At school <input type="checkbox"/> None | |
| Nebulizer: <input type="checkbox"/> At home <input type="checkbox"/> At school <input type="checkbox"/> None | |
| Flu/Pneumonia Vaccine: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know | |
| Receiving Allergy Shots: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know | |
| School Related Asthma Events | |
| (see worksheet, next page) | |
| Date form completed _____ | |
| Visits to school health office for preventative care _____ | |
| ED visits for asthma (if known) _____ | |
| Visits to health office for asthma symptoms _____ | |
| 911 calls for asthma _____ | |
| Days sent home due to asthma _____ | |
| Hospitalizations for asthma (if known) _____ | |
| Total days absent _____ | |
| Days absent known to be due to asthma _____ | |
| School Nurse _____ | |

| School Based Interventions | |
|---|--|
| Permission to interact with doctor: <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Sent letter to doctor: <input type="checkbox"/> Yes <input type="checkbox"/> No Date _____ | |
| Teach inhaler/spacer technique: <input type="checkbox"/> Yes <input type="checkbox"/> No Teach Peak Flow Technique: <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Parent Counseling: <input type="checkbox"/> Yes <input type="checkbox"/> No Date _____ | |
| Student Health Counseling: <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Peak flow Log: <input type="checkbox"/> Yes <input type="checkbox"/> No Asthma Education for Classmates: <input type="checkbox"/> Yes <input type="checkbox"/> No Open Airways for Schools: <input type="checkbox"/> Yes <input type="checkbox"/> No IMPACT Asthma Kids: <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Other formal asthma education program: <div style="text-align: right;"> <input type="checkbox"/> Yes <input type="checkbox"/> No </div> | |
| Parent or student support group participation: <div style="text-align: right;"> <input type="checkbox"/> Yes <input type="checkbox"/> No </div> | |
| Emergency Protocol on file: <input type="checkbox"/> Yes <input type="checkbox"/> No Emergency Protocol shared with staff: <div style="text-align: right;"> <input type="checkbox"/> Yes <input type="checkbox"/> No </div> | |
| P.E. Teacher Education: <input type="checkbox"/> Yes <input type="checkbox"/> No Staff Education/Counseling: <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, number of staff _____ | |
| Trigger identification at school: <input type="checkbox"/> Yes <input type="checkbox"/> No Trigger modification at school: <input type="checkbox"/> Yes <input type="checkbox"/> No Trigger identification at home: <input type="checkbox"/> Yes <input type="checkbox"/> No Trigger modification at home: <div style="text-align: right;"> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know </div> | |
| Home visit related to asthma: <input type="checkbox"/> Yes <input type="checkbox"/> No Date _____ | |
| Enrolled in extracurricular asthma program: <div style="text-align: right;"> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know </div> | |

Asthma Case Management Worksheet

Student _____

School year _____

| Health Appraisal | Date | July/ Aug | Sept | Oct | Nov | Dec | Jan | Feb | Mar | April | May | June |
|---|------|--------------|------|-----|-----|-----|-----|-----|-----|-------|-----|------|
| Communication with Health Care Provider | | | | | | | | | | | | |
| Open airways for schools received | | | | | | | | | | | | |
| Other classroom asthma programs | | | | | | | | | | | | |
| Home visits by school for asthma | | | | | | | | | | | | |
| Total days absent | | | | | | | | | | | | |
| Days absent due to asthma | | | | | | | | | | | | |
| 911 calls for asthma | | | | | | | | | | | | |
| ED visits for asthma | | | | | | | | | | | | |
| Hospitalizations for asthma | | | | | | | | | | | | |

| Individual Education | Date | Return Demo by Student | Personal Best Peak Flow |
|------------------------------|-------------|-------------------------------|--------------------------------|
| Peak flow instruction/review | | | |
| Inhaler instruction/review | | | |
| Spacer instruction/review | | | |

| Individual Education | Date | Comments/Additional Information |
|---|-------------|--|
| Trigger Identification | | |
| Personal trigger modifications | | |
| Referred for Influenza/Pneumococcal Vaccine | | |

Adapted from original at: http://www.aaaai.org/members/allied_health/tool_kit/handouts/school_nurse_case_worksheet.pdf

ASTHMA SYMPTOM DIARY -- PRE-VERBAL

| | | |
|---|------------------------|----------------|
| | | |
| Name: | Medical Record Number: | Date of Birth: |
| Month/Year: | | |
| Has a fever (mark date with *) | | |
| Date: | | |
| Cough frequency | | |
| None.....0 | | |
| Occasional.....0 | | |
| Frequent.....0 | | |
| Character of cough | | |
| Dry.....1 | | |
| Productive or wet.....2 | | |
| Croupy (barking seal).....3 | | |
| Nasal symptoms | | |
| None.....0 | | |
| Stuffy.....1 | | |
| Clear Drainage.....2 | | |
| Yellow or green discharge.....3 | | |
| Wheezing or forcing air out | | |
| None.....0 | | |
| Little.....1 | | |
| Moderately bad.....2 | | |
| Severe.....3 | | |
| Activity (playing, feeding, and vocalizing) | | |
| Quite normal.....0 | | |
| Some difficulty.....1 | | |
| Moderate difficulty.....2 | | |
| Severe difficulty.....3 | | |
| Retractions (sucking in of chest wall) | | |
| None.....0 | | |
| Occasional.....1 | | |
| Part of day.....2 | | |
| Most of day.....3 | | |
| Sleep disturbance due to cough, wheeze, or breathing problems | | |
| None.....0 | | |
| Heard, does not wake.....1 | | |
| Awake.....2 | | |
| Unable to sleep.....3 | | |
| Drugs (No. of doses/24 hours) | Week 1 | Week 2 |
| 1. | | |
| 2. | | |
| 3. | | |
| 4. | | |
| 5. | | |
| 6. | | |

ASTHMA SYMPTOM DIARY -- VERBAL

| | | |
|---|------------------------|----------------|
| Name: | Medical Record Number: | Date of Birth: |
| Month/Year: Has a fever (mark date with *) | | |
| Date: | | |
| Coughing | | |
| None.....0 | | |
| Occasional.....0 | | |
| Frequent.....0 | | |
| Character of cough | | |
| Dry.....1 | | |
| Productive or wet.....2 | | |
| Croupy (barking seal).....3 | | |
| Nasal symptoms | | |
| None.....0 | | |
| Stuffy.....1 | | |
| Clear Drainage.....2 | | |
| Yellow or green discharge.....3 | | |
| Wheezing or forcing air out | | |
| None.....0 | | |
| Little.....1 | | |
| Moderately bad.....2 | | |
| Severe.....3 | | |
| Activity level | | |
| Quite normal.....0 | | |
| Some difficulty.....1 | | |
| Moderate difficulty.....2 | | |
| Severe difficulty.....3 | | |
| Short of breath or chest tight | | |
| None.....0 | | |
| Occasional.....1 | | |
| Part of day.....2 | | |
| Most of day.....3 | | |
| Sleep disturbance due to cough, wheeze, or breathing problems | | |
| None.....0 | | |
| Heard, does not wake.....1 | | |
| Awake.....2 | | |
| Unable to sleep.....3 | | |
| Peak flow | | |
| Morning | | |
| After school | | |
| Drugs (No. of doses/24 hours) | Week 1 | Week 2 |
| 1. | | |
| 2. | | |
| 3. | | |
| 4. | | |
| 5. | | |
| 6. | | |

Peak Flow Record

Student Name: _____

Peak Flow Zones: Red _____ Yellow _____ Green _____

[illegible]

* Space for additional comments on back

Additional Comments

[illegible]

E

Section E

**IS THIS POSSIBLY A
STUDENT WITH
UNDIAGNOSED ASTHMA?**

A Multimedia Asthma Screening Program for Children 7-12

On the CD with this manual you will find a folder entitled “Multimedia Screening”. Open this folder and double click on “Start Screening”. The ideal use of this program is with a child and parent. Enter the firstname only of the child. This preserves confidentiality in the event that the report is later misplaced. No record of the answers is saved on the computer. Next, click “GO”. Eight brief movies will play. After each movie the child will respond by selecting “Never”, “Sometimes”, or “Often” to the question “Does this ever happen to you?” After selecting an answer it is possible to change that answer before going to the next movie. After all questions are answered a report will appear on screen with a print button. After printing the report you can “CLICK HERE” at the bottom of the page to open a page for the parent to complete. This form can be printed blank for completion at home or answered on screen by a parent and then printed. The form below illustrates the contents of the report generated after a child completes the multimedia screening form.

| Title | Never | Sometimes | Often |
|---|-------|-----------|-------|
| I wheeze & cough while sitting quietly | | | |
| I wheeze, cough, or feel short of breath after running | | | |
| I wake up at night wheezing and struggling to breathe | | | |
| I wake up at night due to coughing | | | |
| People smoke around me | | | |
| Tobacco smoke exposure greatly increases the likelihood that children will be troubled by respiratory problems. Children who have asthma & are exposed to smoke are at much greater risk for serious symptoms requiring urgent care. Tobacco smoke also causes many other health problems including ear and sinus infections, allergies, and an increased number of colds & respiratory infections. | | | |
| Other things make me cough, wheeze, or feel short of breath | | | |
| Many things can make asthma worse. Airborne particles such as pollen, animal dander, & dust mites can trigger asthma or allergy symptoms. Very cold air & heavy breathing can also trigger asthma symptoms. Allergy tests can help identify triggers. Learning to avoid triggers can help with asthma control. Allergy medications such as nose sprays and antihistamines might be helpful too, especially during peak pollen seasons in the spring and fall. | | | |
| When I run or play hard coughing, wheezing, or difficulty breathing make it hard for me to keep up with other kids | | | |
| Running or playing hard might cause someone who has asthma to feel unable to breathe well enough to keep up. Pay attention to the concerns of children who shy away from physical activity because of breathing problems. Being overweight or out of shape might also cause shortness of breath, but it is important to always consider asthma as a possible explanation too. Exercise is important for everyone. Let's identify & control asthma so kids can keep fit. | | | |

Parents: Please comment on your child's responses then complete Asthma Screening Tool for parents by [CLICKING HERE](#).

If you have concerns about your child's breathing after these activities make an appointment with your health care provider. Keep a daily symptom diary until your appointment. Share these results and your child's symptom diary at this appointment.

Asthma Screening Tool

Student: _____

Date: _____

The purpose of this form is to help parents answer the question “is there a possibility that my child has asthma?” No paper and pencil test can completely answer this question. However, if you check no boxes below, the possibility of asthma is very unlikely.

Does your child experience any of the following?:

- ☐ Frequent cough, worse particularly at night
- ☐ Wheezing or noisy breathing (especially when breathing out)
- ☐ Difficulty in breathing
- ☐ Complaints of chest tightness

Do these symptoms occur or worsen in the presence of:

- ☐ Exercise
- ☐ Viral Infection
- ☐ Animals with fur or feathers
- ☐ House-dust mites (in mattresses, pillows, upholstered furniture, carpets)
- ☐ Mold
- ☐ Smoke (tobacco, wood)
- ☐ Pollen
- ☐ Changes in weather
- ☐ Strong emotional expression (laughing or crying hard)
- ☐ Airborne chemicals or dusts
- ☐ Menses

Do these symptoms occur or worsen at night, awakening you/your child?

- ☐ Yes

Do these symptoms make it difficult for you/your child to run, play, or work?

- ☐ Yes

If you checked one or more items, it is important that you share this information with your health care provider. Complete the attached symptom diary and take this to your appointment. A complete asthma evaluation includes a medical history, physical examination, lung tests, spirometry, and additional studies (i.e. radiology tests and allergy testing). Asthma is a common lung condition in childhood. We hope you will evaluate your child’s health and seek special care if this seems wise. Together we can fight asthma.

ASTHMA SYMPTOM DIARY -- VERBAL

| | | |
|---|------------------------|----------------|
| Name: | Medical Record Number: | Date of Birth: |
| Month/Year: Has a fever (mark date with *) | | |
| Date: | | |
| Coughing | | |
| None.....0 | | |
| Occasional.....0 | | |
| Frequent.....0 | | |
| Character of cough | | |
| Dry.....1 | | |
| Productive or wet.....2 | | |
| Croupy (barking seal).....3 | | |
| Nasal symptoms | | |
| None.....0 | | |
| Stuffy.....1 | | |
| Clear Drainage.....2 | | |
| Yellow or green discharge.....3 | | |
| Wheezing or forcing air out | | |
| None.....0 | | |
| Little.....1 | | |
| Moderately bad.....2 | | |
| Severe.....3 | | |
| Activity level | | |
| Quite normal.....0 | | |
| Some difficulty.....1 | | |
| Moderate difficulty.....2 | | |
| Severe difficulty.....3 | | |
| Short of breath or chest tight | | |
| None.....0 | | |
| Occasional.....1 | | |
| Part of day.....2 | | |
| Most of day.....3 | | |
| Sleep disturbance due to cough, wheeze, or breathing problems | | |
| None.....0 | | |
| Heard, does not wake.....1 | | |
| Awake.....2 | | |
| Unable to sleep.....3 | | |
| Peak flow | | |
| Morning | | |
| After school | | |
| Drugs (No. of doses/24 hours) | Week 1 | Week 2 |
| 1. | | |
| 2. | | |
| 3. | | |
| 4. | | |
| 5. | | |
| 6. | | |

F

Section F

CHILD AND FAMILY ASTHMA SELF-MANAGEMENT EDUCATION

Expectations for Standards of Care -for the student with asthma-

General Goals of Asthma Therapy

- ☐ Prevent asthma symptoms during the day and night:
 - ☐ No sleep disruption by asthma
 - ☐ No missed school or work days due to asthma
 - ☐ No or minimal visits to the Emergency Room
 - ☐ No or minimal hospitalizations
- ☐ Maintain normal or nearly normal activity levels including exercise & other physical activities
- ☐ Have normal or nearly normal lung function
- ☐ Be satisfied with your asthma care
- ☐ Have no or minimal side effects while receiving optimal medications
- ☐ Significantly reduce or eliminate attacks
- ☐ Enhance long term health by taking anti-inflammatory medications regularly
- ☐ Create an individualized treatment plan to include:
 - ☐ controlling triggers for asthma
 - ☐ a medication plan
- ☐ Gradually “step down” or reduce long term control medications when the goals of the therapy are reached
- ☐ “Step up” or increase long term control medications if asthma is poorly controlled
- ☐ Monitor and manage your asthma over time
- ☐ Establish a health care team between the patient, physician and other caregivers
- ☐ Provide education for prevention and self-care
- ☐ Listen to and answer your questions
- ☐ Refer you to a specialist (allergist or lung doctor) if asthma goals are not being met
- ☐ Schedule an office visit at least every 6 months

Asthma Patients Should Expect Their Doctor to:

- ☐ Take a medical history
- ☐ Give a thorough physical exam
- ☐ Check lung function
- ☐ Exclude other possible diagnoses
- ☐ Establish a diagnosis, including whether the asthma is mild or severe
- ☐ Develop and agree on a shared set of goals for asthma therapy

Source: Arizona Asthma Coalition © (1999).

Managing Asthma at School

-Parents need to take the first step-

- Schedule a meeting with teachers and the school nurse to discuss your child's condition.
- Encourage your children to take their maintenance medications as prescribed.
- Review your child's triggers with them and encourage them to ask their teacher for help when symptoms worsen.
- If your child is allergic to certain foods, inform school cafeteria staff and teachers, and suggest safe alternatives. If possible, have your child bring a bag lunch to school. The child, teacher or school nurse should have an Epi-Pen and know how to use it.
- Inform physical education teachers and coaches about asthma and warning signs of an asthma attack for your child.
- Work with your child's school system to address their concerns about your child's medical needs. Provide a written asthma action plan to better control your child's asthma. Have this plan available to your school personnel.
- Encourage your child's health care provider to be an informational resource for the school.
- See a physician if your child is having trouble with learning, endurance, or alertness. These symptoms may be due to side effects of the child's condition or medications.
- Make sure your child has their medications and peak flow meter with them at school.
- Talk to your child's physician about the type of asthma controller medication your child is currently using. According to 2002 NAEPP guidelines, an inhaled corticosteroid is the best control medicine for persistent asthma.

Source: American Academy of Allergy, Asthma & Immunology (2003). Available online at http://www.aaaai.org/patients/just4kids/classroom_corner/steps.stm



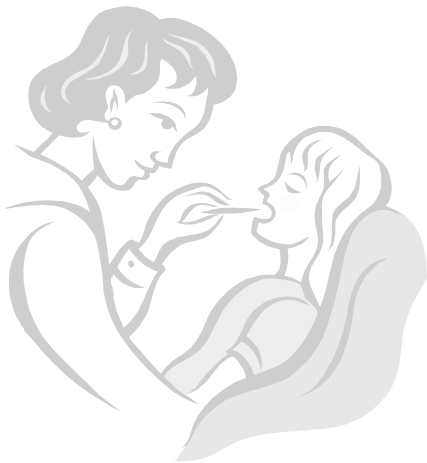
Warning Signs of An Asthma Episode

Asthma episodes rarely occur without warning. Most people have warning signs (physical changes) that occur hours before symptoms appear. Warning signs are not the same for everyone. You may have different signs at different times. By knowing your warning signs and acting on them, you may be able to avoid a serious episode of asthma.

- ☐ Think back on your last asthma episode. Did you have any of the signs below?
- ☐ Check your warning sign(s). Show them to your doctor and family.
- ☐ Remember to follow your asthma control plan as soon as these signs appear.

(Check here)

- | | |
|--|--|
| <input type="checkbox"/> Drop in peak flow reading | <input type="checkbox"/> Stroking chin or throat |
| <input type="checkbox"/> Chronic cough, especially at night | <input type="checkbox"/> Sneezing, Head stopped up |
| <input type="checkbox"/> Difficulty Breathing | <input type="checkbox"/> Headache, fever |
| <input type="checkbox"/> Chest starts to get tight, or hurts | <input type="checkbox"/> Restlessness |
| <input type="checkbox"/> Breathing faster than normal | <input type="checkbox"/> Runny Nose |
| <input type="checkbox"/> Getting out of breath easily | <input type="checkbox"/> Change in face color |
| <input type="checkbox"/> Tired, itchy, watery eyes | <input type="checkbox"/> Dark circles under eyes |
| <input type="checkbox"/> Itchy, scratchy, or sore throat | <input type="checkbox"/> Other: _____ |



Source: National Asthma Education Program.
National Heart, Lung, & Blood Institute (1992).

Stay Home or Go to School?

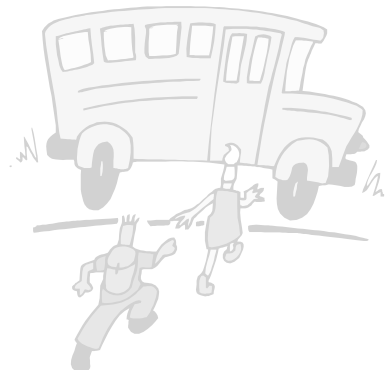
-clues for deciding-

It is probably ok to go to school or work with any of these symptoms:

- ☐ Stuffy nose, but no wheezing
 - ☐ A little wheezing that goes away with medicine
 - ☐ Able to do your usual daily activities
 - ☐ No extra effort needed to breathe
 - ☐ Peak flow number is in the “Green Zone”
-
-

You should probably stay home if you have any of these symptoms:

- ☐ Infection, sore throat, or swollen, painful glands
- ☐ Fever over 100 degrees F orally, or 101 degrees F rectally; face hot and flushed.
- ☐ Wheezing or coughing that still bothers you 1 hour after taking medicine
- ☐ Weakness or tiredness that makes it hard to take part in usual daily activities
- ☐ Breathing with difficulty or breathing very fast
- ☐ Peak flow below 65-70% of personal best, and no response to treatment.



Source: National Asthma Education Program.
National Heart, Lung, & Blood Institute (1992).

Summary of Steps

-Managing an asthma episode-

- ☐ **Know your warning signs** and peak flow zones so you can begin treatment early.
 - ☐ **Take the correct amount of medicine** at times the doctor has prescribed. If your asthma control plan includes increased dosage or a second medicine to be used during episodes, take it as prescribed. **Always call your doctor if you need to take more medicine than the doctor ordered.**
 - ☐ **Remove yourself or the child from the trigger** if you know what it is. Treatment does not work as well if the patient stays around the trigger.
 - ☐ **Keep calm and relaxed.** Family members must stay calm and relaxed, too.
 - ☐ **Rest.**
 - ☐ **Observe yourself** by noting changes in body signs such as wheezing, coughing, trouble breathing, and posture. If you have a peak flow meter, measure peak flow number 5 to 10 minutes after each treatment to see if peak flow is improving.
 - ☐ **Review the list below for signs to seek emergency medical care for asthma.** They include:
 1. **Your wheeze, cough, or shortness of breath gets worse, even after the medicine has been given and had time to work.** Most inhaled bronchodilator medicines produce an effect within 5 to 10 minutes. Discuss the time your medicines take to work with your doctor.
 2. **Your peak flow number goes down, or does not improve after treatment with bronchodilators,** or drops to 50 percent or less of your personal best. Discuss this peak flow level with your doctor.
 3. **Your breathing gets difficult.** Signs of this are:
 - your chest and neck are pulled or sucked in with each breath.
 - you are hunching over.
 - you are struggling to breathe.
 - you have trouble walking or talking.
 - You stop playing and cannot start again.
 - Your lips or fingernails are grey or blue.
- If the any of the last three signs are observed, get help NOW!**
- ☐ **Keep your important information** for getting emergency help handy.
 - ☐ **Call your parent,** teacher, or other adult to help you when signs of an asthma attack begin.

Do not do the following:

- ☐ Do not drink a lot of water, just drink normal amounts.
- ☐ Do not breathe warm moist air from a shower.
- ☐ Do not rebreathe into a paper bag held over the nose.
- ☐ Do not use over-the-counter cold remedies without first calling the doctor.

Source: National Asthma Education Program.
National Heart, Lung, & Blood Institute (1992).

Maintaining an Asthma-friendly Home

-Tips for Parents-

House Dust Mites:

- ☐ Encase mattresses and box springs in an airtight cover.
- ☐ Either encase pillows or wash them in hot water once every week.
- ☐ Wash bed covers, clothes, and stuffed toys once a week in hot water (130 degrees F).

Other Actions to Reduce Dust Mites:

- ☐ Reduce indoor humidity to less than 50%. Use a dehumidifier as needed.
- ☐ Remove carpets from the bedrooms of those with asthma.
- ☐ Do not allow asthmatic children to sleep or lie on upholstered furniture. Replace with vinyl, leather, or wood furniture.
- ☐ Remove carpets that are laid on concrete.
- ☐ Use exhaust-port HEPA (high-efficiency particulate air) filters on vacuums, or central vacuum.

Animals:

- ☐ If your child is allergic to animals, avoid having animals in your home.
- ☐ Choose a pet without fur or feathers (such as a fish or snake).
- ☐ If you must have a warm-blooded pet, keep the pet outside of your child's bedroom at all times. Outside the home is even better.
- ☐ If your home has forced-air heat, close air ducts in your bedroom.
- ☐ Wash the pet weekly in warm water.
- ☐ Avoid visiting homes with pets. If you must go to such a home, take your rescue and prevention medications before going.

Cockroaches:

- ☐ Use insect sprays; have the asthmatic children out of the home while you are spraying. Roach traps may also help.
- ☐ All units in a multiple-family dwelling (apartment buildings, etc.) must be treated to eliminate roaches.

Tobacco Smoke:

- ☐ Do not smoke.
- ☐ Do not allow smoking in your home. Have household members smoke outside.
- ☐ If you smoke, wear a smoking jacket, and leave it outside when you come in.
- ☐ Do not smoke in your car, or other confined areas where your children will be.
- ☐ Choose no-smoking areas in restaurants, hotels, and other public buildings.

Wood Smoke:

- ☐ Do not use a wood-burning stove to heat your home.
- ☐ Do not use kerosene heaters.

Colds and Infections:

- ☐ Talk to your doctor about flu shots.
- ☐ Keep your child away from people with colds or the flu, whenever possible.

Strong Odors:

- ☐ Avoid strong odors associated with paint, perfume, talcum powder, cleaning products, or strong cooking odors. Use exhaust fans and open windows.

Adapted from: *Partners in Asthma Care*, National Heart, Lung, and Blood Institute (1995).

Setting Activity Guidelines

-Suggestions for parents-

Parents often attempt to prevent asthma episodes by limiting what activities their children can participate in. The goal is to allow your child to do what he or she wants to do. This means not limiting activities out of fear.

Help your child stay active and healthy with the following steps:

- **Before setting any limits, look at what your child can already do. Try to help your child do more.** Do not make up rules that may hold him or her back without good reason.
- **Base any limits your set on what has really happened with your child.** Do not base it on what you think might happen or what might be true for others with asthma. No child with asthma is the same. Each child has different levels of physical fitness and maturity. Aim toward setting fewer or no limits and letting your child have more responsibility.
- **Discuss the limits you think are right with your child.** Try to agree on limits that both of you can accept.
- **Discuss disagreements or doubts with your doctor** so that he or she can help decide if the rules are necessary for your child.
- **Practice and review with your child those things that can help to manage an asthma episode** if he or she accidentally goes beyond his or her limits.
- **To help your child do more, find specific ways to protect him or her from those things that can trigger asthma.** For example, if your child is allergic to animal dander and wants to visit a friend who has a dog, have your child take asthma medicine before the visit or have the friend come to your house. Your child should not touch the animal.

Source: National Asthma Education Program.
National Heart, Lung & Blood Institute (1992).

Asthma Self-Maintenance

-Peak flow monitoring info for parents-

Importance:

Peak Expiratory Flow (PEF) provides a simple way of measuring breathing ability. It is reproducible, demonstrating the severity of air flow obstruction (severity of asthma attack). PEF can be measured with inexpensive devices called *peak flow meters*. Peak flow meters are designed to monitor, NOT diagnose asthma. Patients need to be instructed on how to appropriately use a peak flow meter. It should be demonstrated to the patient, with frequent review of technique.

A patient's *personal best* reading is the most appropriate reference value by which to compare repeated readings. It can be a useful reading for long-term daily monitoring, as well as short-term monitoring and evaluating exacerbations.

Personal Best:

A personal best peak flow reading is the highest peak flow number achieved over a two to three week period (when asthma is under good control). Good control means the child feels good, and does not have any asthma symptoms. Each patient's personal best peak flow reading is different, and may be higher or lower than the peak flow of someone the same height, weight, and gender.

How to Measure:

To find a personal best peak flow number, take peak flow readings at least once a day for two to three weeks. Measure peak flow at these times:

- ☐ Between noon and 2 pm each day
- ☐ Each time the patient takes short-acting inhaled beta2-agonist to relieve symptoms
- ☐ Any other time the patient or physician feels is necessary

Outlying Values:

If a PEF reading is recorded that is considerably higher than other values, this reading should not be considered a personal best reading. It may merely be the result of "spitting" into the flow meter, or coughing. Caution should be used in establishing a personal best when an outlying value is observed.

Flow Variability:

When the morning PEF is below 80% of the patient's personal best, PEF should be measured more than once daily (again before taking bronchodilator medication). The additional measurements of PEF will enable the patient to determine if their asthma is continuing to worsen or is improving after taking medication. If their asthma is in fact worsening, they will be able to more quickly respond.

Periodically, patients should assess their PEF in the morning and in the afternoon, for one to two weeks. This is a way to assess variability, which is an indicator of the current level of the patient's asthma severity.

RELIABLE ASTHMA WEB SITES – for Parents

<http://www.aanma.org>

Mothers of Asthmatics, great consumer web site for asthma, info for school, home, etc

http://www.aaaai.org/patients/just4kids/classroom_corner/default.stm

Classroom Corner, American Academy of Allergy, Asthma, and Immunology

http://www.lungusa.org/asthma/asthma_children_index.html

American Lung Association, Asthma In Children www.asthmabusters.org (online club)

<http://www.aaaai.org/nab/index.cfm>

American Academy of Allergy, Asthma, & Immunology

i.e. Check pollen and mold counts for your area, Sign up for e-mail notices of high counts

<http://www.aafa.org>

Asthma & Allergy Foundation of America

<http://www.nhlbi.nih.gov/health/public/lung/asthma/asthma.htm#control>

National Heart, Lung, and Blood Institute, Facts About Controlling Your Asthma

<http://www.ginasthma.com/>

Global Initiative for Asthma

i.e. “What You and Your Family Can Do About Asthma” (Eng & Sp.)

Guide to Formal Asthma Education Courses for School Use

Asthma education is an important component of an overall approach for asthma control. Basic education should be part of routine clinical care. Self-management education should continue in other settings such as the school. “All patients may benefit from a formal asthma education program that has been evaluated and reported in the literature to be effective.” (NHLBI, 1997) In fact a key asthma target for Healthy People 2010 is to increase participation in formal asthma education courses from 8% to 30%. (*Healthy People 2010*, 2001). The following programs are appropriate for school settings.

IMPACT Asthma Kids CD©

Format – 44 brief multimedia lessons, self-paced, computer-assisted instruction, automated and secure record keeping, symptom reporting feature, web-enabled

Target audience – 6-12 year olds; **Cost** - \$2-4 per child, grant funding available

Source – Children’s Hospital, University of Missouri, Columbia

Evidence of effectiveness - established by a large randomized, controlled clinical trial (Krishna et al., 2003); **More Info** - <http://impactasthma.missouri.edu>

Technical support and inquiries - franciscob@health.missouri.edu

Open Airways™

Format – small group (8-10 children) instruction, 6 sessions of 40 minutes

Target audience – 8-11 years of age; **Cost** - \$20

Source – American Lung Association (1-800-586-4872)

Evidence of effectiveness – established by several studies (Bruzzeze, Markman, Appel, & Webber, 2001)

More Info - http://www.lungusa.org/press/asthma/asthma_091603.html

Power Breathing™

Format – small group classroom instruction, 4 sessions of 90 minutes

Target audience - teens

Source – Asthma & Allergy Foundation of America; **Cost** - \$295

Evidence of effectiveness –

More Info - <http://www.aafa.org/templ/display.cfm?id=477>

1) Wee Wheezers™ and 2) Wee Wheezers Home™

Format – 1) four 2 hour sessions for parents (with kids 4-6 attending two)
2) 8 home visits (2 video tapes, coloring book, and fact sheets)

Target audience – parents of infants and young children less than 7 years

Source – Asthma & Allergy Foundation of America; **Cost** - \$295

Evidence of effectiveness – effective for families of 1-3 year olds (Wilson et al., 1996), improved asthma management & clinical outcomes (Brown et al., 2002)

More Info - <http://www.aafa.org/templ/display.cfm?id=477>

Asthma Self-Management Course References

- Brown, J. V., Bakeman, R., Celano, M. P., Demi, A. S., Kobrynski, L., & Wilson, S. R. (2002). Home-based asthma education of young low-income children and their families. *Journal of Pediatric Psychology*, 27(8), 677-688.
- Bruzzese, J. M., Markman, L. B., Appel, D., & Webber, M. (2001). An evaluation of Open Airways for Schools: using college students as instructors. *Journal of Asthma*, 38(4), 337-342.
- Healthy People 2010* (2001). [HTML webpages]. Department of Health & Human Services. Retrieved 11/9/2003, 2003, from the World Wide Web: <http://www.healthypeople.gov/Document/HTML/volume2/24Respiratory.htm#Toc489704825>
- Krishna, S., Francisco, B. D., Balas, E. A., Konig, P., Graff, G. R., & Madsen, R. W. (2003). Internet-enabled interactive multimedia asthma education program: a randomized trial.[comment]. *Pediatrics*, 111(3), 503-510.
- National Heart, Lung, and Blood Institute (1997). *National Asthma Education and Prevention Program Expert Panel Report 2: Guidelines for the Diagnosis and Management of Asthma* [PDF online document]. National Heart, Lung, and Blood Institute. Retrieved 11/19/2003, 2003, from the World Wide Web: <http://www.nhlbi.nih.gov/guidelines/asthma/asthgdl.pdf>
- Wilson, S. R., Latini, D., Starr, N. J., Fish, L., Loes, L. M., Page, A., & Kubic, P. (1996). Education of parents of infants and very young children with asthma: a developmental evaluation of the Wee Wheezers program.[erratum appears in J Asthma 1997;34(3):261]. *Journal of Asthma*, 33(4), 239-254.

IMPACT Asthma Kids CD*

Quick Install Notes

- 1) If you would like to open an IMPACT training site at your school request a site **key** (special 16 character code that you will enter once when you set up the software). E-mail franciscob@health.missouri.edu. Once you have your key, go on to step 2.
- 2) Insert your School Asthma Manual CD into each computer you want to use for IMPACT training or for checking student records later. Each workstation must be connected to the Internet. Open the "IMPACT Software" folder and double click on "IMPACT_Setup.exe"
- 3) Follow the prompts and enter "SL" when asked for the first two letters of your CD key
- 4) After the software is loaded find and Double Click the Mr. O2 logo on your desktop to launch IMPACT. (Once loaded the CD is not needed.)
- 5) When the start page appears Click once on "GO"
- 6) You will be asked to register your site by entering the key you received by email. Paste your **key** HERE for future installations. Please, provide the requested information, including your email, phone, and fax numbers
- 7) **Remember** to write down your administrator ID and Password after you decide what you want these to be. **This step protects the confidentiality of your training records.** You'll need the ID & PW each time to want to register a student or look up records.
- 8) After registering your IMPACT site, Click the "ADMIN" button & enter your own name as the first student. **(Please, choose a different ID & PW so you can use IMPACT as a learner.)** Go through all 44 movies so you will know what your students will learn when using IMPACT.
- 9) Now you are ready to register students and check their training records in the future. If possible let students choose their own ID & PW so they will be more likely to remember these. (You can always look these up for students by clicking ADMIN and selecting that child's name and registration information.)
- 10) Have a parent sign the attached permission form for each child.

If you need assistance please e-mail franciscob@health.missouri.edu

Your site will initially be set for 11 students. The Missouri Department of Health has established a fund to provide for additional licenses. So if you use all your licenses and need to train more students just email Ben and request additional licenses. This can be done in a minute as soon as your request is received.

WHY use IMPACT Asthma Kids CD©? Parents may ask this same question. Read the parent permission form below for a quick explanation. For more details see the "IMPACT Info" folder. You'll find the 2003 Pediatrics article with published results of a clinical study that determined the effectiveness of IMPACT Asthma Kids CD©.

You'll also find a helpful PowerPoint slide show in the same folder that explains more about the features of IMPACT Asthma Kids CD©. Did you know that you can send the CD home with a child? Missouri school nurses have permission to copy the CD (a blank CD costs less than 20 cents) and send the software home with your students. Watch the slide show to learn where to find the child's personal CD key code. (NEVER share your site key code.)

When a student works at home parents and siblings can learn too. Even when using IMPACT at home, student progress through the course will be recorded automatically in your school site records. (Click "Admin")

Only 8% of people who have asthma complete a formal course of training to learn to manage their disease. **You can change this!** Healthy People 2010 calls for an increase to 30%. Let's help our students exceed this goal!

Load IMPACT and get started helping our kids learn to better control their asthma and be ready to be successful in school!

Ben Francisco, RN, BC, PNP, AE-C
franciscob@health.missouri.edu

ALSO:

Use "Quest for the Code" as a fun and educational reward for kids who complete a formal training course. IT'S FREE!!!

<http://www.starbright.org/projects/asthma/>

Consider using "Open Airways" (6 class sessions for young school age children)

http://www.ala.org/open_airways.htm

Consider "Power Breathing" (4 interactive sessions for small groups of teens)

<http://www.aafa.org/templ/display.cfm?id=11&sub=479>

IMPACT Asthma Kids CD® Parent Permission Form

Dear Parent,

If you grant permission for your child to participate in asthma self management education using the IMPACT Asthma Kids CD® (IMPACT) program please sign below after you have read this explanation.

IMPACT is a multimedia program that uses cartoons and graphics to help children better understand and explain their experience of asthma. IMPACT is a computer-assisted instructional program that keeps up with your child's progress through 44 lessons. The program documents comprehension by asking one or two questions after each lesson to be sure your child understands the key ideas. Missed answers prompt the computer to review those lessons at the next session automatically. IMPACT also helps your child learn to describe their asthma symptoms and their medication use so they will be better prepared to communicate with you, their doctor, and with their teacher and school nurse. All records are confidential and will be provided only to you unless you instruct me to share information with your doctor or another person who needs to know.

IMPACT has been tested and found to be very effective in both increasing children's asthma knowledge and in improving their asthma health status. (Results of a study of IMPACT have been published in the March, 2003 issue of the journal *Pediatrics*, page 503-510.) IMPACT was developed by Children's Hospital and the Advanced Technology Center, University of Missouri. Funding was provided by Schering Plough Corporation through an Aetna Academic Medicine and Managed Care Forum 2000 Quality Care Research Award. IMPACT was recognized for excellence in computer-based consumer education by the International Nursing Society with a Pinnacle Award in 2002.

A special computer at the Health Science Center, University of Missouri maintains records for each school. An advantage of this system is that program information about asthma can be automatically updated since each learning session begins with communication with the central computer. It is also possible for your child to access the program at home or other locations where you chose to install the software.

No one has access to your child's records except the school nurse or school representative listed below. There is no commercial use of your child's information. Electronic records are maintained and protected in accordance with federal guidelines (Health Insurance Portability & Accountability Act). There is no known risk of harm associated with a child taking part in effective asthma self management education.

I grant permission for my child _____ to be enrolled and to participate in IMPACT Asthma Kids CD® training. I have been informed that I can address any questions I have and that I may revoke this permission by contacting the person listed as IMPACT training coordinator below.

Signed _____ date _____

Witnessed _____ date _____

IMPACT training coordinator _____ phone _____

G

Section G

HEALTH STAFF TRAINING

School Health Staff Training

School nurses, teachers, administrators, and school staff play important roles in the safe and effective management of asthma at school.

Over the last two decades the worldwide prevalence of asthma has increased dramatically, particularly among school-age children. Large numbers of students are experiencing poorly controlled, disabling asthma. Yet, this problem is growing worse at a time when very effective asthma medications have become available. Today, with appropriate education, clinical care, and support, children with asthma can lead normal lives.

This section of the manual will focus on changes that occur in the airway due to asthma, signs and symptoms of an asthma flare-up (exacerbation), medications used in the treatment of asthma, and skills needed by health care staff to assist children who have asthma.

**You can make a
difference!
Help control
asthma in your
school!**



Staff Procedure Performance Checklist For Managing Asthma in School

Instructor signature signifies that the staff member successfully demonstrated competency in the management of the designated skill.

| | Date | Staff member performing procedure | Instructor signature |
|-----------------------------|---|---|---|
| MDI with Inspirease | _____ _____ _____ _____ _____ | _____ _____ _____ _____ _____ | _____ _____ _____ _____ _____ |
| Spacer/Aerochamber | _____ _____ _____ _____ _____ | _____ _____ _____ _____ _____ | _____ _____ _____ _____ _____ |
| Nebulizer | _____ _____ _____ _____ _____ | _____ _____ _____ _____ _____ | _____ _____ _____ _____ _____ |
| Peak Flow Meter | _____ _____ _____ _____ _____ | _____ _____ _____ _____ _____ | _____ _____ _____ _____ _____ |
| Epi Pen Autoinjector | _____ _____ _____ _____ _____ | _____ _____ _____ _____ _____ | _____ _____ _____ _____ _____ |

Pathogenesis of Asthma in Children

Components of Airway Limitations

- Acute Bronchoconstriction
- Airway Edema
- Mucus Plug Formation
- Airway Injury and Repair



Implications of Asthma Inflammation

- Airway Hyperresponsiveness
- Airflow limitation
- Respiratory symptoms:
 - coughing
 - wheezing
 - shortness of breath
 - chest tightness
- Persistent symptoms
- Pathologic damage (even when symptoms are not present)

Characteristic Features of Asthma Inflammation

- Mast cell activation
- Inflammatory cell infiltration
- Edema of the airway
- Collagen deposition beneath the basement membrane
- Goblet cell hyperplasia with mucus hypersecretion
- Denudation and disruption of bronchial epithelial smooth muscle

Adapted from: Pediatric Asthma: Promoting Best Practice, a Guide for Managing Asthma in Children. American Academy of Allergy, Asthma & Immunology (1999)

Definition of Asthma

National Heart Lung and Blood Institute *Expert Panel Report*, (1997) defines asthma as:

... a chronic inflammatory disorder of the airways in which many cells and cellular elements play a role, in particular, mast cells, eosinophils, T lymphocytes, neutrophils, and epithelial cells. In susceptible individuals, this inflammation causes recurrent episodes of wheezing, breathlessness, chest tightness, and cough, particularly at night and in the early morning. These episodes are usually associated with wide spread but variable airflow obstruction that is often reversible either spontaneously or with treatment. The inflammation also causes an associated increase in the existing bronchial hyperresponsiveness to a variety of stimuli (NHBLI, 1997).

Pathogenesis of Asthma

Inflammation

- Found in patients with mild, moderate and severe asthma
- Common airway infiltration by inflammatory mediators
- Mast cell degranulation common with mild and moderate persistent asthma
- Epithelial denudation and deposition of collagen to the basement membrane can occur in severe (and often fatal asthma) mucus may occlude the bronchial lumen; bronchial smooth muscle may become hypertrophied; goblet cell hyperplasia may occur.
- IgE antibodies involved with severity of asthma, especially in early airway response to allergens
- Existing allergic illness is a major risk factor for the pathogenesis of asthma.
- IgE antibodies bind to mast cells and basophils, signaling the release of histamine and various leukotrienes, resulting in rapid constriction of airway smooth muscle.
- Mast cells produce various cytokines, contributing to both acute and chronic inflammation.
- Asthma treatment is focused on controlling underlying airway inflammation.

Immune Factor Involvement

- An imbalance occurs between T-helper cells (Th) 1 and Th2.
- Airway inflammation may represent loss of balance between opposing types of T-helper cells.
- Environmental exposure to certain antigens by children genetically capable of generating IgE antibodies may contribute to the development of asthma.
- New treatments being generated to treat leukotriene activity in allergic asthma.
- Interrelationship between immune factor development and airway inflammation

Source: National Asthma Education and Prevention Program Expert Panel Report (2002), National Heart Lung and Blood Institute, as printed in the *Journal of Allergy and Clinical Immunology*, November 2002.

Classification of Asthma Severity and Clinical Features

Severe Persistent—Clinical Features Before Treatment

- **Symptoms**
 - Continual Symptoms
 - Limited physical activity
 - Frequent exacerbations
- **Nighttime Symptoms**
 - Frequent
- **Lung Function**
 - FEV1 or PEF less than or equal to 60%
 - PEF variability >30%

Moderate Persistent—Clinical Features Before Treatment

- **Symptoms**
 - Daily symptoms
 - Daily use of inhaled short-acting beta2 agonist
 - Exacerbations affect activity
 - Exacerbations 2 or more times a week; may last days
- **Nighttime Symptoms**
 - >1 time a week
- **Lung Function**
 - FEV1 or PEF >60% -<80%
 - PEF variability >30%

Mild Persistent—Clinical Features Before Treatment

- **Symptoms**
 - Symptoms >2 times a week but <1 time a day
 - Exacerbations may affect activity
- **Nighttime Symptoms**
 - >2 times a month
- **Lung Function**
 - FEV1 or PEF equal to or greater than 80% predicted
 - PEF variability 20% - 30%

Mild Intermittent—Clinical Features Before Treatment

- **Symptoms**
 - Symptoms less than or equal to 2 times a week
 - Asymptomatic and normal PEF between exacerbations
 - Exacerbations brief (from a few hours to a few days); intensity may vary
- **Nighttime Symptoms**
 - Less than or equal to 2 times a month
- **Lung Function**
 - FEV1 or PEF greater than or equal to 80% predicted
 - PEF variability <20%

Adapted from: National Heart Lung and Blood Institute Asthma Guidelines (2002).

Early Signs of an Asthma Episode

A student may exhibit one or more of these signs during the initial phase of an asthma episode:

Changes in Breathing

- ☐ coughing
- ☐ wheezing
- ☐ mouth breathing
- ☐ shortness of breath
- ☐ rapid breathing

Verbal Complaints

- "My chest is tight."
- "My chest hurts."
- "My neck feels funny."
- "My mouth is dry."
- "I can't catch my breath."

Other Signs

- ☐ itchy skin (may rub at the chin or neck)
- ☐ "clipped" speech (may speak in short, choppy sentences)



Adapted from: Managing Asthma: A Guide for Schools, National Heart Lung and Blood Institute (NHLBI), National Institutes for Health, US Department of Health and Human Services and the Fund for the Improvement and Reform of Schools and Teaching, Office of Educational Research and Improvement (OERI), US Department of Education, September 1991. NIH Publication No. 91-2650.

Avoiding Asthma Triggers in the School Environment

Tobacco Smoke

Tobacco smoke can result in the onset of an asthma episode. This may result from both first-hand and second-hand smoke inhalation. Evidence has also found that young children in their first year of life are at increased risk for developing asthma. To reduce the chance of an asthma episode as the result of tobacco smoke, the following steps could be implemented in the school setting:



- ☐ Encourage smoking cessation programs for students and parents.
- ☐ Enforce a no-smoking policy on school grounds and at all school functions.
- ☐ Encourage parents to avoid smoking indoors, in cars, or around children.

Dust Mites

Dust mites are found in all locations, but are too small to be seen with the naked eye. They often live in mattresses, pillows, carpets, fabric-covered furniture, bed covers, stuffed toys, and clothes. Efforts to limit student exposure to dust mites (thereby minimizing the risk of asthma episodes as a result of dust mite presence) include:

- ☐ Avoiding curtains, throw rugs, and fabric-covered furniture in the school setting
- ☐ Following strict district policies regarding the maintenance of fabric-covered furnishings and rugs, as needed
- ☐ Avoiding the presence of stuffed toys in the school setting
- ☐ Avoiding pillows and loose cushions in the school setting



Pets

Skin flakes, dander, urine, and saliva from pets can trigger asthma episodes for some people. While animals are not terribly common in the school setting, they are occasionally employed as classroom pets and teaching aids, as well as for assistive use for disabled students and staff.

Efforts to reduce asthmatic episodes under such circumstances may be difficult. Some considerations include:



- ☐ Avoiding classroom pets when they are known to trigger allergic asthma response by students or staff
- ☐ Keep animals away from fabric-covered furniture, carpets, and stuffed toys or pillows.
- ☐ Position students known to be allergic to animals away from their location in the room, if possible
- ☐ Alter student schedule if possible to optimize learning while avoiding animal triggers

Pests

Cockroaches and rodents, as well as their waste products, can be asthma triggers for some people. Reduce exposure to these pests by implementing the following safeguards in your school setting:

- ☐ Do not leave food or garbage out.
- ☐ Store food in airtight containers.
- ☐ Clean all food crumbs or spilled liquids right away.
- ☐ Use pesticides according to your school district policy.
- ☐ Limit pesticide spray to infested area.



Molds

Damp conditions may produce an asthmatic episode for some people. Damp conditions also contribute to mold growth. To control mold in the school setting, excess water must be reduced.

Reduction of mold growth at school involves the following:



- Fixing all leaky plumbing and other sources of water entry into the school
- Washing mold from surfaces, and allowing them to dry completely
- Replacing carpeting and other surfaces that are unable to completely dry after being wet
- Keeping drip pans in air conditioning units, refrigerators, and dehumidifiers dry and clean
- Using exhaust fans or open windows in showering areas, as well as in the kitchen.

Weather Changes

Some children and staff may find that weather changes precipitate asthmatic symptoms. For some people, cold, dry air is the trigger. Others may find moist, hot air to be more troublesome. Other problematic situations may include sudden fluctuations in weather conditions, wind, or change in seasons. To help prevent such attacks:

- Encourage children to cover their nose and mouth with a scarf on cold or windy days.
- Use air conditioners when at all possible during humid, windy, or high air-allergy conditions.
- Be aware of forecasted weather conditions. Encourage susceptible children to avoid too much activity during extreme weather.



Allergies

Some people are allergic to specific things such as pollen, trees, fresh cut grass and foods. To prevent an asthma attack:



- Stay indoors and keep windows closed if possible during times when pollen levels are high.
- Highly allergic foods should be avoided in school menus. Action plans should be in place for those students known to have food allergies. High allergy foods include chocolate, eggs, nuts, and peanut butter.
- Students known to have latex allergies should have action plans in place, with appropriate environmental actions enforced.

Strong Odors and Sprays

The presence of strong smells can be a trigger for an asthma attack. Special attention should be given to students known to have such odors as a trigger for asthmatic symptoms. Steps to take in the school setting include:

- Encourage school faculty and staff to avoid wearing strong perfumes/cologne, talcum powder, and hair sprays.
- Avoid the use of strong smelling cleaning agents within the school setting.



Exercise

Asthma can be triggered by exercise or vigorous activity. To avoid this:



- Have students warm up for 6-10 minutes before exercising.
- Limit outdoor activity when air pollen/pollution levels are forecasted as high.
- Encourage students to be proactive in addressing their asthma symptoms. Allow exercise pre-medication as prescribed by a health care provider, and emergency-relief medications as needed for symptoms of asthma.
- Have action plans in place for students with known exercise-induced asthma.

Stress/Excitement

Some students may be susceptible to the onset of an asthma attack as the result of strong emotions. Emotions such as crying, laughing too hard, frustration, or anger may trigger asthma symptoms. To deal with such symptoms:

- Encourage the student to calm down quickly, and remove source of emotion, if possible from the situation.
- Encourage slow, steady breathing.
- Have rescue medications readily available, and action plans in place for children susceptible to such circumstances.



Respiratory Infections

Many students experience respiratory symptoms as the result of infection with colds, flu, or bronchitis. These may also trigger an asthmatic episode. Encourage such students to:

- Have annual flu shot
- Avoid close contact with other people who have respiratory infection
- Wash hands with soap and water regularly, especially during the cold and flu season
- Follow-up with a health care provider at the first signs of a respiratory infection.



Guidelines for Teaching Inhalation Technique to Children

MDI with Inspirease

(a blue, collapsible inhalation holding chamber for use with MDI's)

- Ideal for young school-age children ages 5-8, for use with any MDI
- Prescription kit includes three bags and one mouthpiece (sample has only one bag).
- Bags eventually wear out after 1-3 months of regular use (leaks through holes or tears).
- Major advantage is physical evidence of adequate inspiration as bag deflates (child sucks out air)
- Provides audible signal if excessive inspiratory flow is too rapid.
- If inhalation too rapid medication does not reach small airways.

Key Points in Teaching Inspirease Use

- Refer to the manufacturer's guide, open the insert and point out the steps, note cleaning.
- Correctly assemble Inspirease and manually expand the bag fully.
- Shake the MDI canister & dock it on Inspirease.
- Stand and empty your lungs fully before starting.
- Hold the Inspirease level and seal your lips around the mouthpiece.
- Discharge the medicine into Inspirease and begin inhalation immediately.
- Breathe in slowly & deeply for 3-5 seconds collapsing bag without sounding the whistle

- Hold breath 5-10 seconds, then return air to Inspirease (bag re-inflates).
- Repeat inhalation and hold breath again for 5-10 seconds.
- Rest for a minute, then repeat this sequence for each prescribed "puff".

Special Considerations

- When more than one type of MDI is being used at the same time, start with *quick relief* medications (albuterol, pirbuterol, ipratropium), and end with *control medications* (cromolyn, nedocromil, beclomethasone, fluticasone, budesonide).
- When coughing disrupts the steps above, manually empty the Inspirease bag and start over. It is sometimes necessary to use a quick relief medicine like albuterol before the control medicine when coughing is a persistent problem.



Source: IMPACT Asthma Outreach Office (2002).
University of Missouri, Children's Hospital,
adapted for Missouri School Asthma Manual.

MDI with Spacer, eg. Aerochamber

(a tube designed to improve delivery of medication by metered dose inhaler)

- Appropriate for older children and adults, for use with metered dose inhaler (MDI)
- Increases drug delivery to the small airways by as much as 50%
- Decreases the amount of medicine reaching the mouth, lowers risk of oral side effects.
- Provides feedback (a whistling sound) if inspiratory flow rate is too fast.
- Promotes slower, deeper inhalation with improved drug delivery to small airways
- Confirmation of inhalation is difficult, but supports larger tidal volumes than Inspirease bag.
- Confirm method by visualization of intake of mist and chest expansion

Key Points in Teaching Aerochamber

- Carefully review the manufacturer's guidelines for use and care of device
- Remove mouthpiece cover from Aerochamber and look inside the tube.
- Be sure there is no foreign body present or any loose or broken parts inside the tube.
- Stand up, if possible, and exhale as much air from your lungs as possible.
- Seal your lips around the mouthpiece, elevating the MDI end slightly above level
- Discharge a puff of medicine into tube and immediately begin inhalation.
- Breathe in slowly and deeply for 3-5 seconds.

- If a whistling sound is heard, breathe more slowly.
- A parent or instructor should validate the adequacy of the inhalation.
- Observe the movement of the mist into the mouth and watch for good chest expansion
- Rest for one minute and repeat the procedure for each additional puff ordered.
- Clean and store in accordance with the manufacturer's guidelines.
- Rinse mouth with water and spit into the sink. This reduces risk of side effects.

Special Considerations

- When more than one type of inhaler is used, start with quick relief medicines.
- Recoating device with weak dish detergent solution monthly blocks static electricity

Dry Powder Inhaler

- A dry powder inhaler is a device that delivers a powder form of medication into the lungs.
- More rapid inspiration is needed to carry the heavy powder deep into the lungs (see manufacturers instructions for details)



Source: IMPACT Asthma Outreach Office (2002). University of Missouri, Children's Hospital, adapted or Missouri School Asthma Protocols.

Nebulizer

(an air compressor that suspends medicines in a mist for inhalation)

- There are many types of nebulizers. Portable hand-held nebulizers are very expensive. Standard nebulizers run on household (AC) current only.
- A minimum of 2 milliliters of solution is recommended
- Saline should be added when drug volume is <2 ml.
- Bronchosaline in a bottle that ejects 1 ml of saline with each squirt.
- Cromolyn, albuterol, and ipratropium can be mixed together in any combination.
- Young children should use a face mask to ensure lung deposition
- Directing the mist toward the face with a mouth piece is unreliable.

Key Points in Teaching Nebulizer Use

- After getting a prescription families obtain a nebulizer from a distributor of medical equipment (DME).
- Each insurance company contracts with a DME. Families should call their insurer for directions
- DME companies are responsible for instructing the family & supplying replacement air filters & set-ups.
- Cleaning routines are specified by each manufacturer and should be part of instructions by the DME.
- Air filters become obstructed with dust over time and must be replaced.
- Inhaling slowly and deeply improves drug delivery.

- Crying does not prevent drug delivery to the lungs. Most children adapt to nebulizers well.
- During severe asthma episodes a nebulizer might work better than MDIs. However, MDIs can be effective for relieving even severe symptoms
- Quick relief medicines should be repeated once when serious symptoms are unrelieved.

Special Considerations

- If nebulizer solution appears cloudy or a solid suspension appears, get new medicine.
- Children with asthma do not generally require nebulizers at school on a regular basis.
- Tubing replacement intervals should be specified by the manufacturer.
- Not all set ups are equal. Some deliver smaller particles in less time and are more effective
- If the child needs a break during a treatment, simply turn off the machine and restart it when ready again



Source: IMPACT Asthma Outreach Office (2002). University of Missouri, Children's Hospital, adapted for Missouri School Asthma Protocols

Peak Flow Meter

(Instrument for monitoring peak expiratory flow rate)

- Peak flow meters measure the speed at which air emerges from the lungs (large and small airway flow)
- Asthma involves air trapping and a decrease in airflow
- Peak flow (PF) measurement does not detect small airway flow very well and might be normal even when asthma is poorly controlled
- A fall in PF occurs with serious asthma flare-ups. Most people detect problems earlier by their symptoms
- Peak flow monitoring requires a commitment from kids and families
- Kids with moderate to severe asthma usually benefit from monitoring PF
- Using symptom diaries with PF monitoring provides the best chance of detecting serious airway changes
- PF rates are 10% less at 4 am than at 4 pm normally. This difference increases as asthma worsens
- Before school and after school are ideal routine times for measuring PF
- Asthma is worsening if morning PF >20% lower than the afternoon value
- PF can be predicted from the height of the child. Some never reach this number. Some score much higher
- A child's personal best PF is the highest value on 3 or more days
- "Zone Plans" are based on predicted or personal best PF readings
- On a GREEN (Go) or good day PF >80%. Only control medicines are needed.
- On a YELLOW (Caution) or not-so-good day PF=50-80%. Quick relief medicines are needed.
- On a RED (STOP and call) or bad day, PF <50%. Use quick relief and call your health care provider!
- The difference between morning and afternoon PF is "diurnal variation"
- If diurnal variation >30%, Call the clinic! (Example pm=400, am=275, $125/400=31\%$)

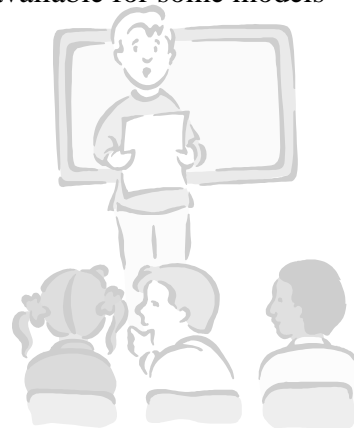
- PF should be measured before and 15 minutes after using quick relief medications when asthma is flared
- If PF does not improve after quick relief medicines, airway swelling is likely.
- Increased doses of the control medicine or a short course of oral steroids might be needed.

Key Points in Teaching Peak Flow Meter Use

- Each recording should be the highest of three attempts. If possible, stand up for this effort.
- Set the pointer to zero. Fill your lungs with air with the deepest breath possible.
- Seal lips around the mouthpiece and take care to keep tongue behind the teeth to avoid blocking the opening
- Exhale as hard and fast as possible. Avoid spitting into the mouthpiece.
- Reset the pointer to zero after each forced exhalation.
- Clean the meter according to the manufacturer's instructions. Allow the meter to air dry between uses.

Special Considerations

- Many brands available. Differing devices might give different values.
- PF meters are available in low range for very young children
- Disposal or cleanable mouth pieces are available for some models



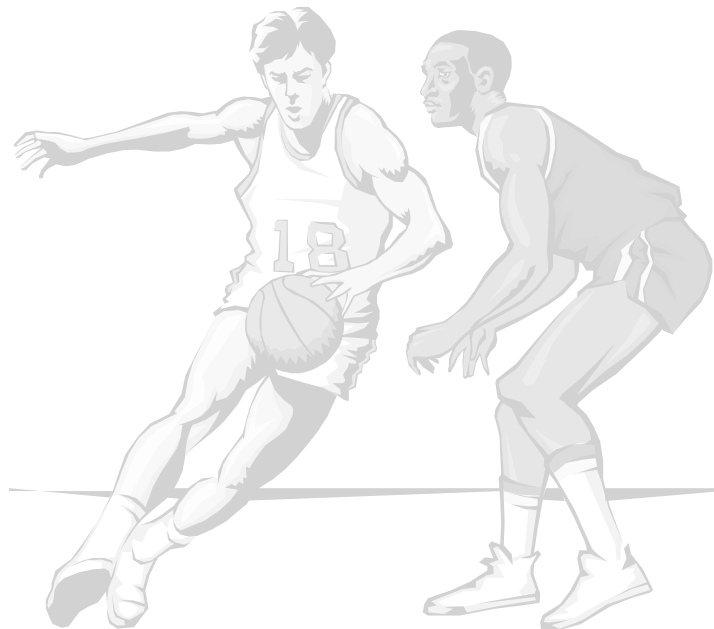
Source: IMPACT Asthma Outreach Office (2002).
University of Missouri, Children's Hospital, adapted for
Missouri School Asthma Protocols.

Medications For Asthma

Asthma management is usually accomplished by a combination of long-term control medication (taken every day for maintenance) and quick relief medications (a fast-acting bronchodilators) to reduce the troublesome symptoms of acute exacerbations. It is important to establish effective use of maintenance medications. Quick relief medications do not change airway pathology and or improve the long-term course of asthma. Excessive use of quick relief medications is associated with life-threatening asthma attacks.

This section includes general information on drug classes used in the treatment of asthma, as well as information specific to the individual medications commonly used within each class.

Historically, asthma has been treated as a condition involving waxing and waning of symptoms, rather than a chronic illness. However, current clinical thinking recognizes underlying inflammatory mediators as causative mechanisms in the pathogenesis of asthma. Asthma is a serious chronic condition, but it can be managed with appropriate pharmacological intervention and avoidance of triggers.



Pharmacology Overview

The greatest advances in the pharmacological control of asthma have come over the last decade with the development of increasingly safe and effective anti-inflammatory agents in the inhaled corticosteroid family of medications. Daily use of inhaled corticosteroids changes the underlying pathology of asthma by reducing airway sensitivity and restoring the normal function of the epithelial lining. No other class of medications currently offers a similar degree of protection from serious asthma exacerbations with such a wide margin of safety and affordability. Appropriate use of inhaled corticosteroids is a central tenet of modern asthma therapy. There are numerous barriers to the use of this most important class of medications. Minority students are less likely to use anti-inflammatory medications and might require special support and encouragement. School health staff can play a crucial role in educating families about the safety and effectiveness of these medications.

Quick relief medications are readily appreciated for their immediate effect on asthma symptoms. However, it must be emphasized that quick relievers, such as albuterol, do not change the course of asthma. Inhaled corticosteroids are only valued when families understand that the long-term outcome of persistent asthma can only be altered by treating underlying airway inflammation. Fears about side effects are largely unfounded. Families need to know that uncontrolled asthma poses far greater risks to a child's health and growth than do inhaled corticosteroids. The following information will help to establish realistic and balanced understanding of the benefits and modest risks of asthma medications.

It is also important to acknowledge that medications alone can not control asthma. The National Heart, Lung, and Blood Institute advocates a four components approach. Each component must be addressed if the best possible outcomes are to be achieved. School personnel have an important role in each component: 1) ongoing assessment and monitoring, 2) management of contributing factors, 3) pharmacotherapy, and 4) education for self-management

To reference the four components approach:

<http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.htm>

For more detailed medication info see Chapter 9 below:

<http://www.aaaai.org/members/resources/initiatives/pediatricasthma.stm>

Types of Inhalation Devices for Asthma Medications

| Device/Medications | Age | Comments |
|---|--|---|
| Metered-Dose Inhaler (MDI) <ul style="list-style-type: none"> ◆ beta2-agonists ◆ corticosteroids ◆ Cromolyn sodium ◆ Nedocromil sodium ◆ Anticholinergics | > 5 years (< 5 years with spacer/holding chamber and face mask for some children) | The child may have difficulty triggering a puff while inhaling. Use with a spacer/holding chamber helps. Older propellant - CFC. New HFA - smaller droplets so less visible & forceful, more effective. |
| Breath-actuated MDI <ul style="list-style-type: none"> ◆ beta2-agonists | > 5 years | The child may not be able to generate the necessary inspiratory flow. Device does not require the use of holding chamber or spacer. |
| Dry-Powder Inhaler (DPI) <ul style="list-style-type: none"> ◆ beta2-agonists ◆ Long acting beta2 ◆ corticosteroids | > 5 years (can be used in 4 year olds, but delivery is more consistent over age 5) | Some devices deliver drug more effectively than an MDI. Some devices may not work in children with low inspiratory volumes. |
| Nebulizer <ul style="list-style-type: none"> ◆ beta2-agonists ◆ anticholinergics ◆ Cromolyn sodium ◆ budesonide | Patients of any age who cannot use an MDI with spacer/holding chamber or with face mask. | Useful in infants and very young children, and any child with a moderate to severe asthma episode. Delivery method of choice for cromolyn sodium. |

Adapted from: Pediatric Asthma: Promoting Best Practice, American Academy of Allergy, Asthma & Immunology (1999).

Inhaled Corticosteroids (ICS)

ICS work by binding to receptors sites on target cells in the epithelium. ICS decrease the amount of inflammation and mucus in the airway. ICS are very unlikely to cause the systemic side effects that are associated with frequent use of oral corticosteroids, such as weight gain, risk of infection, and stunting. This is a highly effective class of medications that are capable of changing the underlying airway pathology of asthma leading to dramatically reduced morbidity and greatly improved quality of life.

| Generic Name | Brand Name | Dosage Form | Low Dose | Medium Dose | High Dose |
|---------------------------------|----------------------|-------------------------------|---------------|----------------|---------------|
| Beclomethasone Dipropionate HFA | Qvar 40 | MDI: 40 mcg/puff | 2-4 puffs/day | 4-8 puffs/day | >8 puffs/day |
| | Qvar 80 | MDI: 80 mcg/puff | 1-2 puffs/day | 2-4 puffs/day | >4 puffs/day |
| Budesonide | Pulmicort Turbuhaler | DPI: 200 mcg/puff | 1-2 puffs/day | 2-4 puffs/day | >4 puffs/day |
| | Pulmicort Respules | Neb Solution: 0.25-0.50 mg | 0.5 mg/day | 1.0 mg/day | 2.0mg/day |
| Flunisolide | AeroBid AeroBid-M | MDI: 250 mcg/puff | 2-3 puffs/day | 4-5 puffs/day | >5 puffs/day |
| Fluticasone Propionate | Flovent | MDI: 44 mcg/puff | 2-4 puffs/day | 4-10 puffs/day | >10 puffs/day |
| | | 110 mcg/puff | | 2-4 puffs/day | >4 puffs/day |
| | | 220 mcg/puff | | 1-2 puffs/day | >2 puffs/day |
| | | DPI: 50 mcg/puff | 2-4 puffs/day | 4-8 puffs/day | >8 puffs/day |
| Triamcinolone | Azmacort | 100 mcg/puff | 1-2 puffs/day | 2-4 puffs/day | >4 puffs/day |
| | | 250 mcg/puff | | 1 puff/day | >1 puffs/day |
| | | MDI: 100 mcg/puff | 4-8 puffs/day | 8-12 puffs/day | >12 puffs/day |

(Doses are for children 12 years of age or younger.)

Side effects for all inhaled corticosteroids include oral candidiasis, cough, and dysphonia. Rinse mouth after each use. Use of a spacer is recommended for MDI forms of inhaled corticosteroids.

Three Approaches to Achieving Pharmacologic Control of Asthma

Step-Down Approach:

This method is generally preferred because it recognizes the importance of controlling asthma symptoms in a timely manner. This approach starts with aggressive therapy, followed by a step-down approach to the minimum amount of medication needed to maintain control of symptoms.

Pharmacologic therapy is considered aggressive if it is initiated at a higher level than would correspond with the initial assessment and evaluation of the child's condition. Such aggressive measures might include introduction of a quick "burst" of oral corticosteroids (typically 5-14 days) in addition to other maintenance medications, or A higher dose of inhaled corticosteroids.

Step-Up Approach:

This approach begins with therapy that corresponds with the condition of the child at the time of assessment evaluation of asthma severity. A step-up approach involves increasing the amount of medication needed until control of symptoms is established. This is followed by a gradual reduction in the medication dose after a determined amount of time. It is recommended that the control is maintained with the minimal amount of medication possible to reduce adverse side-effects.

Step Plan Approach:

This approach incorporates steps up or down in the daily ICS dose to reflect changes in the asthma pattern over time. Most children have periods during the year when less asthma symptoms are experienced, as well as times when symptoms are much more common. A step plan within the asthma action plan enables the child and family to make modest adjustments in ICS dose to match changes in symptom pattern persisting for days or weeks. This practice reduces the need for oral steroid bursts and results in improved quality of life.

Adapted from: Pediatric Asthma Promoting Best Practice.
American Academy of Allergy, Asthma & Immunology (1999).

Long Acting Beta-2 Agonists

Long-acting beta agonists (LABA) bind to beta 2 receptors in the lungs. LABA block bronchoconstriction by interfering with endogenous adrenergic pathways in the airways.

| Generic Name | Brand Name | Dosage Forms | Dose | Potential side effects and nursing considerations |
|--|---------------------------------|---|---|--|
| Salmeterol <i>Delayed onset (30 minutes) sustained effect for 10-12 hours</i> | Serevent Serevent Diskus | MDI:21 mcg/puff DPI:50 mcg/blister | 2 puffs, b.i.d. 1 puff, b.i.d. | tachycardia, tremor, palpitations. Should not be used in place of anti-inflammatory therapy. Some increased risk of life threatening asthma. |
| Formoterol <i>Immediate onset sustained effect for 10-12 hours</i> | Foradil | DPI, 12 mcg capsules for inhalation | 1 capsule administered by an Aerolizer | tachycardia, tremor, palpitations. Should not be used in place of anti-inflammatory therapy. |
| Sustained-Release Albuterol | Volmax, Proventil, Repetabs | Tablet: 4 mg | Maximal dose: 6-12 years: 4 mg b.i.d. > 12 years: 8 mg b.i.d. | tachycardia, tremor, irritability. Greater risk of untoward systemic effects. |

Recently approved drugs are listed on the FDA Consumer Info Site:

<http://www.fda.gov/cder/consumerinfo/>

Formoterol, Foradil <http://www.fda.gov/cder/consumerinfo/druginfo/foradil.htm>

Combination Medications

These medications combine a long-acting beta 2-agonist with an inhaled corticosteroid. Essentially, patients receive both of their daily medications with one puff.

| Generic Name | Brand Name | Dosage Form | Dose | Potential side effects and nursing considerations |
|--|---------------|--|--|--|
| Fluticasone Propionate with Salmeterol | Advair Diskus | Fluticasone-- 100 mcg with Salmeterol-- 50 mcg Fluticasone-- 250 mcg with Salmeterol-- 50 mcg Fluticasone-- 500 mcg with Salmeterol-- 50 mcg | One puff twice daily ONLY. DO NOT take more than one puff every 12 hours! | Side effects include all side effects for long acting beta 2 agonists (hypertension, cardiac arrhythmias, and long-term inhaled corticosteroids -- see pages on these medications) |

Quick Relief Medications

Short-Acting Inhaled Beta 2-Agonists

| Generic Name | Brand Name | Dosage Forms | Dose |
|--------------|----------------------------|--|--|
| Albuterol | Airet | Premix Nebulizer solution: 2.5 mg/3 ml, 0.083% | 0.05 mg/kg (minimum 1.25 mg, maximum 2.5 mg) |
| | Proventil Ventolin | Concentrate: Albuterol 0.5% dose 0.25-0.5 ml | TID to QID |
| | Proventil-HFA | MDI: 90 mcg/puff Nebulizer: 5 mg/ml, 0.083% containing 2.5 mg | 2 puffs, 15 minutes before exercise; 5 puffs TID to QID; 2 puffs TID to QID prn |
| | Ventolin | DPI: 200 mcg/capsule Nebulizer solution: | 1 capsule 15 minutes before exercise; 1 capsule TID to QID prn |
| | Rotacaps AcuNeb | Unit dose vials 0.63 mg/3 ml 1.25 mg/3 ml | 0.63 mg TID for maintenance; 1.25 mg TID for acute bronchospasm and for patients unresponsive to lower dose |
| Bitolterol | Tornalate | MDI: 370 mcg/puff | 2 puffs TID to QID prn |
| Levalbuterol | Xopenex | Nebulizer solution: Unit dose vials 0.32 mg/3 ml 0.63 mg/3 ml 1.25 mg/3 ml | 0.63 mg TID for maintenance; 1.25 mg TID for acute bronchospasm and for patients unresponsive to lower dose |
| Pirbuterol | Maxair Maxair Autohaler | MDI: 200 mcg/puff | 2 puffs TID to QID prn |

Side effects of Short-Acting Beta2-agonists include tremor, tachycardia, headache, restlessness, apprehension, anxiety, nausea, sweating, and flushing. If a maximum dose is exceeded, sympathomimetic cardiac effects can occur. Chronic daily use may lead to worsening asthma and decreased pulmonary function. The need for more than two refills a year indicates poor asthma control and need for increased long-term medications.

Quick Relief Medications

Anticholinergics

Anticholinergic medications cause bronchodilation by blocking vagally mediated reflexes and antagonizing the action of acetylcholine.

| Generic Name | Brand Name | Dosage Forms | Dose | Side effects and nursing considerations |
|---------------------|------------|--|---|---|
| Ipratropium bromide | Atrovent | MDI: 18 mcg/puff Nebulizer: 0.20 mg/ml (0.02%) | 2 puffs QID; max 12 inhal/day 1/2 vial < 14 yr 1 vial > 14 yr q 4 hr prn 1 unit dose QID | Side effects include dry mouth, headache, dizziness, blurred vision, rash, and G.I. upset. Should be protected from light. Inadvertent eye contact may result in mydriasis. |

Combination Quick-Relief Medications

These medications provide an anticholinergic with a short acting beta two agonist. They work to provide immediate relief in an acute asthma attack.

| Generic Name | Brand Name | Dosage Form | Dose | Side Effects |
|---|------------|---|--|--|
| Ipratropium Bromide and Albuterol Sulfate | Combivent | Ipratropium: 18 mcg with Albuterol: 90 mcg via aerosol inhalation | 2 puffs QID, prn. Max of 12 inhal/day | Hypertension; paradoxical bronchospasm; arrhythmias |
| | Douneb | ipratropium bromide 0.5 mg/3 ml & albuterol 2.5 mg/3 ml solution for inhal. (25 vials) | 1 vial Q 4-6 hours | |

Oral Corticosteroids

Oral corticosteroids are important during severe asthma exacerbations when inhaled medications are no longer relieving serious breathing problems. Most asthma attacks requiring oral steroids can be managed at home if treatment is started early enough. When asthma awakens a child at night and does not respond to quick relievers the need for oral steroids is likely. In the presence of airway symptoms, a peak flow rate below 50-60% of personal best that does not improve 30 minutes after quick relievers points to the need for a steroid burst. Most asthma exacerbations respond dramatically by the 3rd day of steroids and by the 5th day are resolved. The need for oral steroids longer than 7 days raises the strong possibility that other factors are contributing to the exacerbation. A physical examination and thorough history should be completed by the health care provider.

| Generic Name | Brand Name | Dosage Forms | Dose |
|--------------------|---|--|--|
| Methylprednisolone | Medrol | <u>Tablet:</u> 2, 4, 6, 8, 16, 32 mg | 0.25-2 mg/kg daily in single dose or every other day as needed for control Short course (3-10 days) 1-2 mg/kg/day (max 60 mg/day) |
| Prednisolone | Prelone Pediapred | <u>Tablet:</u> 5 mg <u>Liquid:</u> 15 mg/5 ml <u>Liquid:</u> 5 mg/ml | 2 mg/kg daily in single dose or QID as needed for control Short course (3-10 days) 1-2 mg/kg/day (max 60 mg/day) |
| Prednisone | Prednisone Deltasone Prednisone Intensol | <u>Tablet:</u> 1, 2.5, 5, 10, 20, 25 mg <u>Liquid:</u> 5 mg/ml | 2 mg/kg/day in single dose or QID as needed for control Short course (3-10 days) 1-2 mg/kg/day (max 60 mg/day) |

Side effects for all oral steroids include adrenal suppression, headache, increased appetite, weight gain, immunosuppression, and impaired wound healing. Other potential serious side effects include adrenal suppression, osteoporosis, and growth delay. Children's growth should be monitored. These drugs should not be stopped without consulting a health care provider.

Leukotriene Modifiers

These oral medications alter the effects of leukotriene, an airway inflammatory mediator. In the treatment of asthma these medications are not as effective as inhaled corticosteroids. As an addition to a regimen of inhaled corticosteroids leukotriene modifiers are less effective than adding a long-acting beta agonist. Montelukast is approved for the treatment of asthma and allergy, so these medications are sometimes a helpful addition to the medication regimen.

| Generic Name | Brand Name | Dosage Forms | Dose | Potential side effects and nursing considerations |
|--|--------------|--|---|---|
| Montelukast | Singulair | <u>Tablet:</u> 4 mg packets (1-5 years) 4 mg chewable (2-5 years); 5 mg chewable (6-14 years) 10 mg (> 14 years) | 1 packet sprinkled on soft food 1 tablet in the evening. AM dosing optional to aid EIA control | Dizziness, headache, rash, nausea, and vomiting (all are rare) |
| Zafirlukast | Accolate | <u>Tablet:</u> 10 mg (7-11 years) 20 mg (> 12 years) | 1 tablet b.i.d. Take one hour before or two hours after meals. | Headache, dizziness, Churg-Strauss syndrome (eosinophilia, vasculitic rash, pulmonary and cardiac complications can occur if concurrent oral steroid dose is reduced. Can be life threatening.) |
| Zileuton <i>Requires liver enzyme studies</i> | Zylo Filmtab | <u>Tablet:</u> 600 mg (> 12 years) | 1 tablet QID | Headache, nausea, vomiting, elevation of liver enzymes (may require monitoring). Increases effect of theophylline. |

Cromolyn sodium & Nedocromil sodium

These medications inhibit the early and late phase asthmatic response to allergens and exercise. They act by inhibiting the allergen-triggered release of histamine and slow-releasing substance of anaphylaxis from mast cells. Cromolyn is an alternative therapy for the management of mild, persistent asthma.

| Generic Name | Brand Name | Dosage Forms | Dose | Potential side effects and nursing considerations |
|-------------------|------------|---|--|---|
| Nedocromil sodium | Tilade | <u>MDI</u> : 1.75 mg/puff | <u>MDI</u> : 2 puffs, b.i.d. to q.i.d. | May leave an unpleasant taste in mouth |
| Cromolyn sodium | Intal | <u>MDI</u> : 0.8 mg/puff <u>Nebulizer solution</u> : 20 mg/2 ml ampule | <u>MDI</u> : 2 puffs, t.i.d. to q.i.d. <u>Nebulizer</u> : 1 ampule t.i.d. to q.i.d. | Maximum effect may not be seen for 4-6 weeks |

Theophylline

In Asthma:

- An alternative treatment for mild persistent asthma, or in addition to ICS for moderate persistent asthma
- As adjunct to beta 2 agonist and anti-inflammatory therapy in persistent asthma
- It is not recommended for emergency department treatment of acute exacerbation
- IV administration along with other therapy is sometimes implemented for hospitalized patients
- Serum levels are monitored (maintain level between 5-10 ug/ml)

Pharmacology

- Maximal therapeutic range is steady state serum concentration of 10-20 ug/ml
- A more conservative range of 5-10 ug/ml is generally recommended.
- Periodic serum monitoring is required.
- Metabolized by the liver.
- Dosage is calculated on ideal body weight.
- Side effects: GI and central nervous system side effects, as well as tachycardia.

Serum Monitoring When:

- Patient first begins theophylline therapy, and at regular intervals of 6-12 months.
- Patient experiences adverse effects.
- Patient fails to respond optimally when a dose is increased.
- Conditions exist that are known to alter theophylline metabolism.

Drugs & Conditions Altering Theophylline Metabolism:

MANY drug interactions:

Decreased Metabolism (elevated level)

- Liver disease
- Congestive heart failure
- Cimetidine
- Quinoline
- Febrile Illness
- Some antibiotics
- Older Age

Increased Metabolism (decreased level)

- Cigarette smoking
- Young age
- Phenytoin

Exacerbates GERD (gastroesophageal reflux disease is a common contributing factor in moderate and severe asthma)

Toxicity

- Generally not associated with doses under 15 ug/ml
- Increases progressively with levels above 20 ug/ml
- Nausea and vomiting may be evident
- Symptoms of over-stimulation and/or seizures may occur
- Tachycardia and/or arrhythmias may occur.

Standing Orders For Managing Respiratory Distress

1. Evaluate and assess respiratory status for defining characteristics: nasal flaring, respiratory rate, retractions, auscultation for wheezes, crackles, or stridor, and color.
 - ☐ Use student's peak flow meter if appropriate

2. Children **with prior history** of asthma or reactive airway disease:
 - ☐ Follow the asthma action plan if available
 - ☐ Students without an asthma action plan should be given a single albuterol aerosol treatment according to the dosage chart below while the primary care physician and/or parent/guardian is being contacted
 - ☐ Students who respond favorably to the treatment should be observed until the primary care physician or parent/guardian can be reached, or for at least one (1) hour after treatment
 - ☐ Call 911 for students who do not improve with aerosol

3. Children in respiratory distress **without prior history** of asthma:
 - ☐ Contact primary care physician and parent/guardian
 - ☐ If unable to make contact, call 911

Dosing of albuterol nebulizer solution 0.5% (5mg/ml), trade name Ventolin or Proventil, to be given in saline over ten (10 minutes by a nebulizer.)

| Respiratory Distress Dosage Chart | | | |
|-----------------------------------|-------------|---------------------|-------------------------|
| By Age | Student Age | Dosage of Albuterol | Dosage of Bronchosaline |
| | < 7 years | 0.5 ml | 2.5 ml |
| | > 7 years | 1.0 ml | 2.0 ml |

Primary Care Physician's Signature

Date

Standing Order for the Use of an Epi-Pen/Epi-Pen Jr.

In the event of anaphylaxis, a severe allergic reaction that may be triggered by asthma, an insect bite, a drug allergy or a food allergy, the Epi-Pen or Epi-Pen Jr. will be used for students according to weight guidelines. The following procedures should be followed by a school nurse or designated first aid responder trained by a school nurse if the reaction becomes SEVERE.

ALLERGIC REACTIONS

| | Symptoms | Actions |
|-------------------|---|---|
| Mild Reaction | Rash Itching/Hives Asthmatic who complains of difficulty breathing | Check the student's health history. Administer prescribed medication according to Action Plan (i.e. inhalers). Observe for additional symptoms. |
| Moderate Reaction | Increased breathing difficulty Wheezing | Call the nurse and parent. Locate the Epi-Pen. Observe the student and be prepared to administer the Epi-Pen if condition becomes SEVERE. |
| Severe Reaction | Airway obstruction Throat tightness/tongue swelling Fearful appearance Difficulty speaking Pale or dusky coloration | See below for detailed instructions. |

Action for SEVERE allergic reaction:

- ◆ **Call 911**
- ◆ **Choose appropriate Epi-Pen according to the child's weight:**
Child weight below 30 kg (60 pounds) use Epi-Pen Jr (0.15 mg epinephrine)
Child weight above 30 kg (60 pounds) use Epi-Pen (0.3 mg epinephrine)
- ◆ **Administer Epi-Pen according to these directions:**
 1. **Pull off safety cap**
 2. **Place tip on outer thigh at right angle to leg (for insect sting, inject leg opposite to sting).**
 3. **Press firmly into thigh**
 4. **Hold in place for 10 seconds**
 5. **Remove and massage area for 10 seconds**

Physician's Signature

Date

Adapted from: National Association of School Nurses (1997)

H

Section H

SCHOOL STAFF & COMMUNITY TRAINING

Asthma "I.Q."

-from the National Asthma Education Program-

The following true-or-false statements test what you know about asthma.
Be sure to read the correct answers and explanations on the next page.

| | <u>True/False</u> | |
|--|----------------------------|----------------------------|
| 1. Asthma is a common disease among children and adults in the United States. | T <input type="checkbox"/> | F <input type="checkbox"/> |
| 2. Asthma is an emotional or psychological illness. | T <input type="checkbox"/> | F <input type="checkbox"/> |
| 3. The way that parents raise their children can cause asthma. | T <input type="checkbox"/> | F <input type="checkbox"/> |
| 4. Asthma episodes may cause breathing problems, but these episodes are not really harmful or dangerous. | T <input type="checkbox"/> | F <input type="checkbox"/> |
| 5. Asthma episodes usually occur suddenly without warning. | T <input type="checkbox"/> | F <input type="checkbox"/> |
| 6. Many different things can bring on an asthma episode. | T <input type="checkbox"/> | F <input type="checkbox"/> |
| 7. Asthma cannot be cured, but it can be controlled. | T <input type="checkbox"/> | F <input type="checkbox"/> |
| 8. There are different types of medicine to control asthma. | T <input type="checkbox"/> | F <input type="checkbox"/> |
| 9. People with asthma have no way to monitor how well their lungs are functioning. | T <input type="checkbox"/> | F <input type="checkbox"/> |
| 10. Both children and adults can have asthma. | T <input type="checkbox"/> | F <input type="checkbox"/> |
| 11. Tobacco smoke can make an asthma episode worse. | T <input type="checkbox"/> | F <input type="checkbox"/> |
| 12. People with asthma should not exercise. | T <input type="checkbox"/> | F <input type="checkbox"/> |

Your score — How many answers did you get correct?

- 11 - 12 = Congratulations! You know a lot about asthma. Share this information with your family and friends.
- 10 - 11 = Very good.
- < 10 = Go over the answers and try to learn more about asthma.

Source: National Heart, Lung, & Blood Institute

Answers to the Asthma "I.Q." Quiz

1. TRUE. Asthma is a common disease among children and adults in the U.S., and it is increasing. About 10 million people have asthma, of whom 3 million are under 18 years of age.

2. FALSE. Asthma is not an emotional or psychological disease, although strong emotions can sometimes make asthma worse. People with asthma have sensitive lungs that react to certain things, causing the airways to tighten, swell, and fill with mucus. The person then has trouble and may cough and wheeze.

3. FALSE. The way parents raise their children does not cause asthma. It is not caused by a poor parent-child relationship, or by being overprotective.

4. FALSE. Asthma episodes can be very harmful. People can get very sick and need hospitalization. Some people have died from asthma episodes. Frequent asthma episodes, even if they are mild, may cause people to stop being active and living normal lives.

5. FALSE. Sometimes an asthma episode may come on quite quickly. However, before a person has any wheezing or shortness of breath, there are usually symptoms such as a cough, a scratchy throat, or tightness in the chest. Most patients learn to recognize these symptoms and can take medicine to prevent a serious episode.

6. TRUE. For most people with asthma, an episode can start from many different triggers. Some of these things are pollen from trees or grasses; molds or house dust; weather changes; strong odors; cigarette smoke; and certain foods. Other triggers include being upset; laughing or crying hard; having a cold or the flu; or being near furry or feathered animals. Each person with asthma has an individual set of asthma triggers.

7. TRUE. There is no cure yet for asthma. However, asthma patients can control it to a large degree by:

- ☐ Getting advice from a doctor who treats asthma patients
- ☐ Learning to notice early signs of an asthma episode
- ☐ Avoiding things that cause asthma episodes
- ☐ Taking medicine just as the doctor says
- ☐ Knowing when to get medical help with a severe episode.

8. TRUE. Several types of medicines are available to control asthma. Some people with mild asthma need to take medication only when they have symptoms. But most people need to take medicine every day to prevent symptoms and also to take medicine when symptoms do occur. A doctor needs to decide the best type of medicine for each patient and how often it should be taken. Asthma patients and their doctors need to work together to manage the disease.

9. FALSE. People with asthma can monitor how well their lungs are functioning with a peak flow meter. This small device can be used at home, work, or school. The peak flow meter may show that the asthma is getting worse before the usual symptoms appear.

10. TRUE. Both children and adults can have asthma. Sometimes, but not always, symptoms will go away as children get older. However, many children continue to have asthma symptoms throughout adulthood. In some cases, symptoms of asthma are not recognized until a person is an adult.

11. TRUE. Smoke from cigarettes, cigars, and pipes can bring on an asthma attack. Indoor smoky air from fireplaces and outdoor smog can make asthma worse. Some can also "set off" other triggers. Smokers should be asked not to smoke near someone with asthma. Moving to another room may help, but smoke travels from room to room. No smoking is best for everyone!

12. FALSE. Exercise is good for most people—with or without asthma. When asthma is under good control, people with asthma are able to play most sports. For people whose asthma is brought on by exercise, medicines can be taken before exercising to help avoid an episode. A number of Olympic medalists have asthma.

Source: National Asthma Education Program.
National Heart, Lung, & Blood Institute (1992).

-For School Staff- General information about asthma

Asthma is the most common chronic illness among children. Most children with asthma have relatively mild cases that can be controlled by medicine.

Asthma is characterized by:

- ☐ airway inflammation
- ☐ airway hyperresponsiveness
- ☐ airway obstruction

Breathing difficulty results from changes in the air passages of the lungs:

- ☐ inner walls of the airways swell
- ☐ muscles of the airway walls tighten and constrict
- ☐ swollen walls produce excess mucus, which clogs the airways

Factors that may trigger asthma include:

- ☐ respiratory infections, colds
- ☐ allergic reactions to pollen, mold, animal dander, feathers, dust, food, etc.
- ☐ vigorous exercise
- ☐ exposure to cold air or sudden temperature changes
- ☐ air pollution, fumes, or strong odors
- ☐ cigarette smoke
- ☐ excitement, stress

Teachers and Staff as Friends

Children with asthma may feel scared and different than other classmates. The staff person who knows what to do, and who treats children with understanding and kindness, can help to empower students and reduce their fear of asthma. If it is possible to do without embarrassing children with asthma, explain to the class what asthma is, its effects on breathing, and how classmates can be helpful.

Source: Asthma Alert for Teachers. American Lung Association (2003). Available online at http://www.lungusa.org/school/asthma_alert.html

-For School Faculty and Staff- First-Aid Tips for Breathing Difficulties

- Help the student sit in a comfortable position with his or her shoulders relaxed. Leaning forward with elbows on knees may be helpful. Talk with the child reassuringly.
- If there is an asthma action plan for the student, follow the steps prescribed by the child's doctor.
- Encourage the child to take appropriate medicine that the child's doctor has prescribed.
- If the medicines do not appear to be working effectively, notify the school nurse (or school administrator who handles these situations) and the parent or guardian. In some cases children with asthma will need emergency medical care.



Source: Asthma Alert for Teachers. American Lung Association (2003). Available online at http://www.lungusa.org/school/asthma_alert.html

-For Teachers- Asthma symptoms you should know

Common Symptoms:

- Wheezing
- Tightness or pain in the chest
- Coughing throughout the day
- Difficulty breathing and shortness of breath
- Little energy for active play



More Serious Symptoms (Signs that Need Quick Medical Attention):

- If the child's wheeze, cough, or shortness of breath worsens, even after the medicine has been given time to work (most inhaled bronchodilator medicines produce an effect within 5 to 10 minutes).
- The child feels uncomfortable and is having trouble breathing, but you don't hear wheezing sounds (this may still indicate extreme bronchial distress).
- The child has trouble walking or talking, stops playing and cannot start again.
- The child's chest and neck are pulled or sucked in with each breath.
- The child's peak flow rate gets lower, or does not improve after treatment with bronchodilators, or drops 50% of the child's personal best (check with the school nurse or the appropriate personnel about peak flow measurement).
- The child's lips or fingernails are grey or blue. If this happens, get emergency help right away!

Source: Asthma Alert for Teachers. American Lung Association (2003). Available online at http://www.lungusa.org/school/asthma_alert.html

-Tips for Teachers-

It is helpful for teachers to understand asthma, given the increasing number of children diagnosed with asthma in this country. It is not uncommon to have several asthmatic students in one classroom.

Teachers should be aware of early signs of an asthma attack, methods of reducing triggers in the classroom environment, and ways to make asthmatic students feel more comfortable about asthma while at school.

Providing Comfort

- Encourage students with asthma to participate in all activities, including physical education.
- Develop a protocol for making up missed schoolwork with parents and students with asthma.
- Educate other students in the classroom about asthma.

Teachers have the unique opportunity to notice subtle changes in students within their classes. As a result of the considerable time spent with each student, teachers can assess the social and physical *changes* in students as a result of their asthma. Teachers can benefit the asthmatic student by promoting self-esteem in spite of the condition, and by minimizing differences between asthmatic students and other students. This allows them to better fit in with peers.

Concerning Signs

- The student seems to feel that he/she is different from other students.
- The student avoids taking medications, often toughing it out during an attack.
- The student is reluctant to go to the office for medication.
- The student does not notify school staff when self-administering medication, or does not inform staff of need for medication.
- The student shares his/her medication with other students.
- The student avoids physical activity out of fear of asthma symptoms, rather than the presence of actual asthma symptoms.

Field Trips

Teachers should be aware of issues unique to asthmatic students when planning field trips. Sites such as botanical gardens, petting zoos, and smoky locations may trigger asthma.

Make sure the students' rescue medications are brought on all field trips, as well as a peak flow meter (if prescribed). The Emergency Care Plan should always accompany the child outside of school.

Adapted from: Asthma Management in the School Setting: American Lung Association of Washington

-For Teachers- What You Can Do

- Find out which students have asthma. A conference with the parent, child, teacher, and school nurse may be needed. Discuss the child's asthma, medicines, and school management. This information can be entered into an asthma action plan for the child. Make certain copies of the plan are easily accessible. The plan should have information about the child's symptoms and signs, types of medicines and dosages needed, the peak flow readings, what to do in emergencies, and whom to contact.
- You are in control of the classroom environment. Understand what starts the child's asthma and make the classroom as "trigger-free" as possible. Help the child avoid triggers such as excessive dust, sharp odors, other children with respiratory infections, and very cold air.
- On very cold days, it may be best to have the child spend recess time indoors. A friend may wish to join in the indoor activities. During the pollen season, children allergic to pollen should not sit near open windows.
- Birds and furry animals, strong odors from cosmetics, chemicals and art supplies can sometimes trigger asthma. If possible, remove such irritants from the classroom. Gym mats, shoes, lockers, as well as old library books are often loaded with dust and molds. Regular cleaning and airing can help.
- Encourage children to be as active as possible to participate in physical education activities. Children will learn their limits. Not all children will be capable of normal activity. They can stop playing if wheezing or coughing begins. Have them do warm-up exercises before playing. Also, some medicines can be taken prior to physical activity in order to prevent some episodes.
- Children with severe asthma may miss school. You can provide extra encouragement and time to help children keep up with class work.
- If the child seems unusually tired, inattentive or hyperactive, advise the school nurse or parents, as changes in the child's asthma management may be needed. Encourage parents to get continuous asthma care for their child. Lack of ongoing, regular asthma care can lead to serious problems.

Source: Asthma Alert for Teachers. American Lung Association (2003). Available online at http://www.lungusa.org/school/asthma_alert.html

Actions for the Classroom Teacher

- Know the early warning signs of an asthma episode.
- Have a copy of the asthma action plan in the classroom. Review it with the student and the parents. Know what steps to take in the event of an asthma episode.
- Develop a clear procedure with the student and parent for handling schoolwork missed due to asthma.
- Understand that a student with asthma may feel tired or drowsy, different from other kids, anxious about access to medication, embarrassed about the disruption to school activities that an asthma episode causes, and/or withdrawn.
- Help the student feel more comfortable by recognizing these feelings. Try to maintain confidentiality. Educate classmates about asthma so they will be more understanding.
- Know the possible side effects of asthma medications and how they may impact the student's performance in the classroom. Refer any problem to the school nurse and the parent(s). Common side effects of medicine that warrant referral are nervousness, nausea, jitteriness, hyperactivity, and drowsiness.
- Reduce known allergens in the classroom to help students who have allergies. Common allergens found in classrooms include chalk dust, animals, and strong odors (perfumes, paints).
- Encourage the student with asthma to participate fully in physical activities.
- Allow a student to engage in quiet activity if recovery from an acute episode precludes full participation.

Source: Managing Asthma: A Guide for Schools. National Heart, Lung, and Blood Institute (NHLBI), National Institutes of Health, U.S. Department of Health and Human Services, and the Fund for the Improvement and Reform of Schools and Teaching, Office of Educational Research and Improvement (OERI), U.S. Department of Education. September 1991. NIH Publication No 91-2650.

Physical Education Faculty and Staff

A diagnosis of asthma does not necessarily mean that students should restrict their participation in sports or other physical activity. While some students may require modified physical activity, this is often not the case.

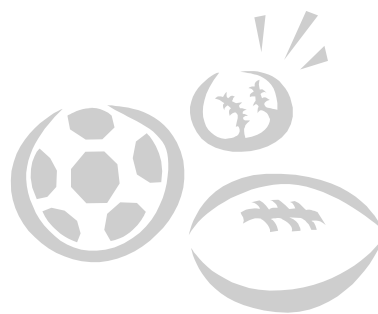
Students with asthma may feel isolated or left out as a result of activity avoidance. This can result in low self-esteem, lack of motivation, and teasing by classmates. Students with asthma should be included in physical activity whenever possible.

Modifications for physical activity involvement may include decreased intensity or length of involvement, or consideration for the type of activity planned. These modifications may be especially helpful if the student has recently experienced an acute asthma flare-up.

Exercise Induced Asthma is a condition where airways become constricted in response to activity (bronchoconstriction). Exercise is a common trigger of asthma, and should be recognized and understood by all school staff. Symptoms of

Exercise Induced Asthma may include wheezing, coughing, chest tightness, and/or shortness of breath both during and after exercise. Other symptoms can include fatigue or chest congestion. Not all people with Exercise Induced Asthma have chronic asthma.

The severity of Exercise Induced Asthma is dependent on the type and duration of physical activity involved. A student's individualized health plan may include guidelines for physical activity. This information should be readily accessible for coaches, physical education instructors, and recess monitors. Frequent symptoms of asthma during exercise may indicate that asthma is not adequately managed, and the school nurse should be notified.



Adapted from: *Asthma* (2001, Vol 6, No. 2).
Management of Exercise-Induced Asthma:
Helpful Hints for Sports Coaches. Available
online at www.asthmaaustralia.org.au

Actions for the Physical Education Instructor and Coach

- Encourage exercise and participation in sports for students with asthma. When asthma is under good control, students with the disease are able to play most sports. A number of Olympic medalists have asthma.
- Appreciate that exercise can cause episodes for many students with asthma. Exercise in cold, dry air and activities that require extended running appear to trigger asthma more readily than other forms of exercise. However, medicines can be taken before exertion to help avoid an episode. This preventative medicine enables most students with exercise-induced asthma to participate in any sport they choose. Warm-up and cool-down activities appropriate for any exercise will also help the student with asthma.
- Support the student's treatment plan if it requires pre-medication before exercise.
- Understand what to do if an asthma episode occurs during exercise. Have the child's asthma action plan available.
- Encourage students with asthma to participate actively in sports but also recognize and respect their limits. Permit less strenuous activities if a recent illness precludes full participation.
- Refer your questions about a student's ability to fully participate in physical education to the parents and the school nurse.

Source: Managing Asthma: A Guide for Schools. National Heart, Lung, and Blood Institute (NHLBI), National Institutes of Health, U. S. Department of Health and Human Services, and the Fund for the Improvement and Reform of Schools and Teaching, Office of Educational Research and Improvement (OERI), U.S. Department of Education. September 1991. NIH Publication No. 91-2650.

Plan for Staying Active -for children-

Even with asthma, you can play and take part in many activities, including sports like other kids. Many kids with asthma cough or wheeze when they exercise, run, or play hard. This does not have to happen. Your asthma medicine will help you be active without coughing or wheezing. Some kids keep asthma symptoms from starting if they take a certain asthma medicine right before they start their activity. Talk to your doctor about this.

It also helps you feel good while you are active if you do stretching exercises (“warm up” and “cool down”) before and after your activity. Here is a plan to help you be active:

- ☐ List the things you do now to stay active.
- ☐ List the things you would like to try.
- ☐ Check off the things you will do to be more active.

Physical Activities I Do Now:

Physical Activities I Would Like to Try:

To Be Active I will:

(Check Here)

Talk to my parent(s) about an activity I would like to do.

Try the activity to see if I can do it without wheezing.

Show my parent(s) how much I can do without wheezing.

Talk to my parents and my doctor about taking medicine before I begin exercise.

This will keep asthma attacks or episodes from starting.

Take a break from activity if I feel I may start wheezing. Follow my asthma control plan.

Source: National Asthma Education Program.
National Heart, Lung & Blood Institute (1992).

Actions for the Principal

- Involve your staff in the school's asthma management program. A school asthma management program is a cooperative effort that involves the students, parents, teachers, school staff, and physicians. Many members of the school staff can play a role in maintaining your school's asthma management program, although the principal or the school nurse may be most instrumental in getting a program started. Take the steps listed below to help set up an asthma management program in our school.
- Develop a clear policy on taking medication during school hours. Work with parents, teachers, the school nurse, and others to provide the most supportive policy that your school system allows so that the student can get the medication he/she needs.
- Designate one person on the school staff to be responsible for maintaining each student's asthma action plan.
- Provide opportunities for staff to learn about asthma and allergies by setting up inservice courses. You may get assistance from your school nurse, or a local hospital or medical society. Other sources of information are the American Lung Association, Asthma and Allergy Foundation of America, National Jewish Center for Immunology and Respiratory Medicine, and the Mothers of Asthmatics.
- Establish an asthma resource file of pamphlets, brochures, and other publications for school personnel to provide an opportunity for the staff to get additional information about asthma. Many of the organizations cited above offer materials for this purpose. Make general information available to students as well.
- Schedule any extensive building repairs or cleaning to avoid exposing students to fumes, dust and other irritants. When possible, try to schedule painting and major repairs during long vacations or the summer months.
- Support and encourage communication with parents to improve school health services.

Source: Managing Asthma: A Guide for Schools. National Heart, Lung, and Blood Institute (NHLBI), National Institutes of Health, U. S. Department of Health and Human Services, and the Fund for the Improvement and Reform of Schools and Teaching, Office of Educational Research and Improvement (OERI), U.S. Department of Education (1991) Publication No. 91-2650

Information for Food Service Personnel

Anaphylaxis

Research has shown that children with asthma are at increased risk for severe allergic reactions to food. The most serious allergic reaction is called anaphylaxis. Symptoms of anaphylaxis can occur immediately after eating, or after several hours. It is important to consider that each episode of anaphylaxis is potentially life-threatening.

Symptoms of Anaphylaxis

- itching and swelling of the lips, tongue, or mouth,
- itching with tightness in the throat, hoarseness, and hacking cough,
- hives, itchy rash, and/or swelling of the face/extremities,
- nausea, abdominal cramping, vomiting, or diarrhea,
- shortness of breath, repetitive coughing or wheezing,
- “thready” pulse, “passing out”

The Link Between Allergy and Asthma

Research suggests that food allergies can bring on an asthma attack, but they are not the common cause of asthma attacks.

It is important for parents to communicate to staff members, so staff members understand what the child is allergic to, identify trigger foods, recognize symptoms, and initiate treatment when necessary.

Anyone with a previous reaction to food is at risk for a repeat reaction. In addition to food, the most common causes of severe allergic reactions include insect stings, latex, and medications.

Nutrition Tips

School Faculty (Teachers, Coaches, etc.)

- Inquire about each student's food allergies during parent/teacher conferences at the beginning of the year.
- Work with parents to protect students from life-threatening reactions to food.
- Keep students with food allergies away from foods known to cause allergies.
- Educate students in the classroom about food allergies.

School Nurse

- Educate school personnel about food allergies and asthma, steps they can take to prevent allergy reactions from occurring.
- Maintain communication with parents, students, and health care providers to make sure the Action Plan in place is current, and reflects any food allergies or special needs. Keep the students' Asthma Action Plans readily accessible.
- Educate all staff about emergency response procedures for food-induced anaphylaxis, or other respiratory emergency.

Managing Students with Food Allergies

Food allergies can threaten your life. Accidental exposure to foods known to cause allergic reactions for some students can be reduced in the school setting when parents, students, and physicians work together.

Family Responsibility

- Notify the school of the child's allergies.
- Work with the school team to develop a plan that accommodates the child's needs throughout the school.
- Provide written medical documentation, instructions, and medications as directed by a physician.
- Provide properly labeled medications and replace medications upon expiration.
- Educate the child in the self-management of the food allergy, including safe and unsafe foods, strategies for avoiding unsafe foods, symptoms of allergic reactions, how and when to notify an adult of an allergic reaction, and how to read food labels (age appropriate).
- Review policies/procedures with school staff, physician, and the child after a reaction has occurred.
- Provide emergency contact information.

School Responsibility

- Be knowledgeable about federal laws, including ADA, IDEA, Section 504, and any state or district policies.
- Review health records submitted by parents/physicians.
- Students should not be excluded from school activities on the basis of food allergies.
- Identify a core team to respond to the student's needs.
- Assure all staff who interact with the student understand the nature of the food allergy. Eliminate the use of food allergens in meals, educational tools, craft projects, and incentives.
- Practice a Food/Allergy Action Plan before an allergic reaction occurs.
- Coordinate the storage of medications, emergency kit, and standing orders for epinephrine.
- Designate school personnel who are properly trained to administer medication with state nursing laws.
- Review policies/prevention with core team members, parents/guardians, student, and physician after reaction has occurred.
- Recommend that all buses have communication devices in case of an emergency.
- Enforce a "no eating" policy on school buses
- Discuss field trips with the child's family
- Follow state/district privacy policies

Source: American School Food Service Association, in cooperation with the National Association of Elementary School Principals, National Association of School Nurses, National School Boards Association, & the Food Allergy & Anaphylaxis Network (2003)

Major Causes of Food Allergies



Peanuts

◆ Peanuts are the leading cause of severe allergic reactions related to food.



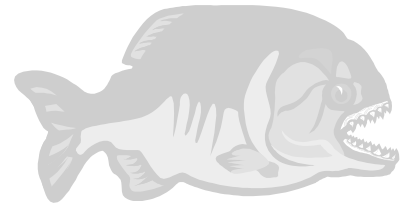
Milk



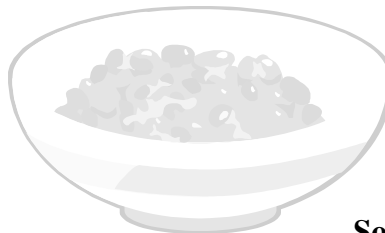
Wheat



Shellfish



Fish



Soy



Tree Nuts (Walnuts, Pecans)



Eggs

Source: The Food Allergy Network



Section I

SCHOOL ENVIRONMENTAL SUPPORT

Indoor Air Quality Tools for Schools Program

Step-by-step guidance to improving the air quality in our nation's schools

The Problem

Nearly 56 million people in the United States spend their days in elementary and secondary schools. According to the Department of Education's National Center for Education Statistics, in 1999, 43 percent of America's public schools—about 33,800—reported at least one unsatisfactory environmental condition (i.e., lighting, heating, ventilation, indoor air quality, acoustics or noise control, or physical security of the building). Approximately 25 percent of public schools reported that ventilation was unsatisfactory, while indoor air quality (IAQ) was reported to be unsatisfactory in about twenty percent of schools. Poor indoor air quality can impact the comfort and health of students and staff, which in turn can affect concentration, attendance, and student performance. Schools that fail to respond promptly and effectively to poor IAQ run the risk of increased short-term health problems, such as fatigue and nausea, as well as long-term health problems like asthma. In serious cases, schools have been shut down and have had to move staff and students to temporary facilities. Delaying remediation of IAQ problems can also be costly and may even lead to liability claims and lawsuits that can damage a school's reputation. Clearly, IAQ issues are best addressed early and better still proactively.

The Solution

The *IAQ Tools for Schools (IAQ TFS)* Program is a comprehensive resource that can help you maintain a healthy environment in your school buildings, by identifying, correcting, and preventing IAQ problems. The Kit is provided to schools at no cost and includes easy-to-follow checklists, videos, sample memos and policies, a recommended management plan, and a unique problem-solving wheel. Using the tools in the Kit, school officials can educate staff, students, and parents about the importance of good IAQ and their roles in ensuring a healthy, comfortable learning environment. Armed with the knowledge of good IAQ practices and commonsense preventive measures, schools can address most IAQ

problems on their own. After all, ensuring a healthy school environment is an investment in your students and staff. To learn more about the *IAQ TFS* Kit and other resources available to you, visit EPA's Web site at www.epa.gov/iaq/schools or order a free Kit by calling the IAQ INFO hotline at (800) 438-4318.

Awards and Recognition

The *IAQ TFS* Awards Program provides incentives and public recognition to schools and school districts that are implementing the Kit. Three award categories are offered: ***Great Start***, ***Leadership***, and ***Excellence***, each honoring schools and school districts as they progress through the various stages of the *IAQ TFS* Kit. Many school districts have been recognized for outstanding achievement and leadership in improving indoor air quality. See our Web site at www.epa.gov/iaq/schools/awards for additional information and applications.

Training and Networking Resources

Learn from the experts! Training and networking resources for schools managing IAQ issues are widely available. The *IAQ TFS* Program sponsors an annual Symposium, internet presentations, and offers specialized training on financing, communications, and facilities maintenance. See www.epa.gov/iaq/schools/index.html for additional information.

United States Environmental Protection Agency
EPA 402-F-03-011

Avoiding Asthma Triggers in the School Environment

Tobacco Smoke

Tobacco smoke can result in the onset of an asthma episode. This may result from both first-hand and second-hand smoke inhalation. Evidence has also found that young children in their first year of life are at increased risk for developing asthma. To reduce the chance of an asthma episode as the result of tobacco smoke, the following steps could be implemented in the school setting:



- ☐ Encourage smoking cessation programs for students and parents.
- ☐ Enforce a no-smoking policy on school grounds and at all school functions.
- ☐ Encourage parents to avoid smoking indoors, in cars, or around children.

Dust Mites

Dust mites are found in all locations, but are too small to be seen with the naked eye. They often live in mattresses, pillows, carpets, fabric-covered furniture, bed covers, stuffed toys, and clothes. Efforts to limit student exposure to dust mites (thereby minimizing the risk of asthma episodes as a result of dust mite presence) include:

- ☐ Avoiding curtains, throw rugs, and fabric-covered furniture in the school setting
- ☐ Following strict district policies regarding the maintenance of fabric-covered furnishings and rugs, as needed
- ☐ Avoiding the presence of stuffed toys in the school setting
- ☐ Avoiding pillows and loose cushions in the school setting



Pets

Skin flakes, dander, urine, and saliva from pets can trigger asthma episodes for some people. While animals are not terribly common in the school setting, they are occasionally employed as classroom pets and teaching aids, as well as for assistive use for disabled students and staff.

Efforts to reduce asthmatic episodes under such circumstances may be difficult. Some considerations include:



- ☐ Avoiding classroom pets when they are known to trigger allergic asthma response by students or staff
- ☐ Keep animals away from fabric-covered furniture, carpets, and stuffed toys or pillows.
- ☐ Position students known to be allergic to animals away from their location in the room, if possible
- ☐ Alter student schedule if possible to optimize learning while avoiding animal triggers

Pests

Cockroaches and rodents, as well as their waste products, can be asthma triggers for some people. Reduce exposure to these pests by implementing the following safeguards in your school setting:

- ☐ Do not leave food or garbage out.
- ☐ Store food in airtight containers.
- ☐ Clean all food crumbs or spilled liquids right away.
- ☐ Use pesticides according to your school district policy.
- ☐ Limit pesticide spray to infested area.



Molds

Damp conditions may produce an asthmatic episode for some people. Damp conditions also contribute to mold growth. To control mold in the school setting, excess water must be reduced. Reduction of mold growth at school involves the following:



- Fixing all leaky plumbing and other sources of water entry into the school
- Washing mold from surfaces, and allowing them to dry completely
- Replacing carpeting and other surfaces that are unable to completely dry after being wet
- Keeping drip pans in air conditioning units, refrigerators, and dehumidifiers dry and clean
- Using exhaust fans or open windows in showering areas, as well as in the kitchen.

Weather Changes

Some children and staff may find that weather changes precipitate asthmatic symptoms. For some people, cold, dry air is the trigger. Others may find moist, hot air to be more troublesome. Other problematic situations may include sudden fluctuations in weather conditions, wind, or change in seasons. To help prevent such attacks:

- Encourage children to cover their nose and mouth with a scarf on cold or windy days.
- Use air conditioners when at all possible during humid, windy, or high air-allergy conditions.
- Be aware of forecasted weather conditions. Encourage susceptible children to avoid too much activity during extreme weather.



Allergies

Some people are allergic to specific things such as pollen, trees, fresh cut grass and foods. To prevent an asthma attack:



- Stay indoors and keep windows closed if possible during times when pollen levels are high.
- Highly allergic foods should be avoided in school menus. Action plans should be in place for those students known to have food allergies. High allergy foods include chocolate, eggs, nuts, and peanut butter.
- Students known to have latex allergies should have action plans in place, with appropriate environmental actions enforced.

Strong Odors and Sprays

The presence of strong smells can be a trigger for an asthma attack. Special attention should be given to students known to have such odors as a trigger for asthmatic symptoms. Steps to take in the school setting include:

- Encourage school faculty and staff to avoid wearing strong perfumes/cologne, talcum powder, and hair sprays.
- Avoid the use of strong smelling cleaning agents within the school setting.



Exercise

Asthma can be triggered by exercise or vigorous activity. To avoid this:



- Have students warm up for 6-10 minutes before exercising.
- Limit outdoor activity when air pollen/pollution levels are forecasted as high.
- Encourage students to be proactive in addressing their asthma symptoms. Allow exercise pre-medication as prescribed by a health care provider, and emergency-relief medications as needed for symptoms of asthma.
- Have action plans in place for students with known exercise-induced asthma.

Stress/Excitement

Some students may be susceptible to the onset of an asthma attack as the result of strong emotions. Emotions such as crying, laughing too hard, frustration, or anger may trigger asthma symptoms. To deal with such symptoms:

- Encourage the student to calm down quickly, and remove source of emotion, if possible from the situation.
- Encourage slow, steady breathing.
- Have rescue medications readily available, and action plans in place for children susceptible to such circumstances.



Respiratory Infections

Many students experience respiratory symptoms as the result of infection with colds, flu, or bronchitis. These may also trigger an asthmatic episode. Encourage such students to:

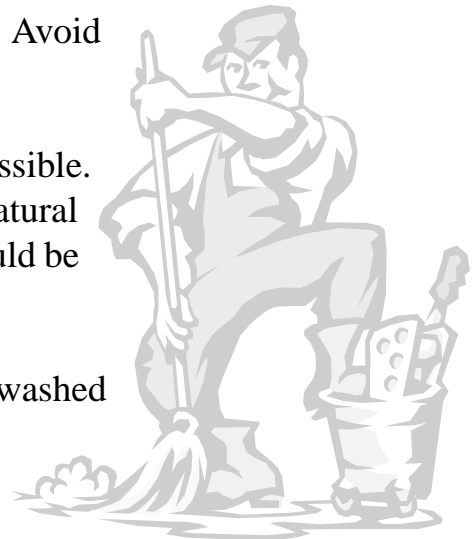
- Have annual flu shot
- Avoid close contact with other people who have respiratory infection
- Wash hands with soap and water regularly, especially during the cold and flu season
- Follow-up with a health care provider at the first signs of a respiratory infection.



Asthma Tips for Custodians

Cleaning Suggestions:

- ❑ **Carpeted** rooms should be vacuumed daily. All other rooms should be vacuumed every other day with commercial efficiency particle arresting (HEPA) filter or cleaner.
- ❑ **Hard Floors** are less likely to be an asthma trigger if kept clean. Dust with static electricity or mineral oil treated mops daily. Wet mops should be used weekly.
- ❑ **Bookshelves** trap dust easily. Dust horizontal surfaces weekly, when students are not present in the classroom.
- ❑ **Cleaning Supplies** contain chemicals that irritate students with asthma. Replace irritating cleaners with safer, effective alternatives when possible.
- ❑ **Pests** should be controlled with Integrated Pest Management (IPM). This program focuses on preventing pests by minimizing the resources needed for survival in the school setting. This decreases the need for application of pesticides. When pests become problematic, alternatives are used prior to the application of pesticide.
- ❑ **Rugs** should be removed where possible, and tile kept clean. Bare wood or tile floors are best for keeping asthma under control.
- ❑ **Carpet Squares** trap dust. Clean them weekly. Avoid vacuuming when students are in school.
- ❑ **Curtains** should be kept off windows where possible. If a valance is needed, synthetic rather than natural fibers are preferable. Curtains and valances should be washed twice yearly.
- ❑ **Shades** are better than curtains, and should be washed with a damp cloth weekly.



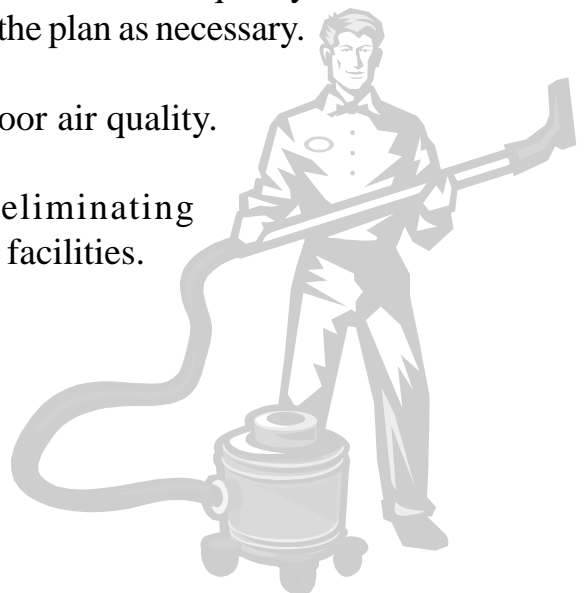
More Asthma Tips for Custodians

Heating and Cooling System:

- **Fan blade** and front grate should be cleaned monthly. Face fan to blow out toward the window, thereby decreasing the amount of pollen and pollution brought into the classroom.
- **Towels** should not be placed under window units to collect condensation. This is an excellent place for mold and bacteria to grow.
- **Air conditioner filters** should be cleaned every two weeks.
- **Belt-Type Humidifiers** should be avoided in the school setting.
- **Air Conditioners** or dehumidifiers should be used to keep relative humidity in the classroom low, between **35** and **40**%.

General Tips:

- **Identify** areas in the school that may be contributing to indoor air pollution.
- **Participate** on Indoor Air Quality (IAQ) management in your school, and help evaluate school air quality needs.
- **Determine** with administration how well the current air quality program at your school works, and modify the plan as necessary.
- **Identify** barriers to maintaining good indoor air quality.
- **Determine** reasonable methods of eliminating environmental pollutants from the school facilities.
- **Use** Integrated Pest Management Plans.



Natural Cleaning Agents -for an asthma-friendly classroom-

- White or apple cider vinegar removes mold, mineral deposits, and crayon marks.
- Baking soda is a good general cleaner that can be used as a rug deodorizer, or a refrigerator deodorizer.
- Club soda is a good spot remover.
- Clorox bleach solution is a viricide, mold remover, and cleaning agent.
- Use liquid rather than bar soap (mild or unscented) for handwashing.

Some cleaning products have strong fumes. Replace caps quickly, and use when students are not around, whenever possible.

Avoid using aerosol sprays with students around.

Make sure danger stickers are in place on all cleaning materials kept in the classroom. Keep such materials stored out of the reach of students.



Source: Chicago Public Schools

Sample District Policy for Carpeting in Schools

General

Recognize the potential problematic health implications of carpeting in schools, particularly in basements and on bare concrete, where moisture and mold are potential problems.

Consider carpeting those areas of schools where teachers and administrators are likely to bring in their own area rugs, mats, and carpets (e.g. places where students sit on the floor, noisy areas where carpeting is needed to buffer the echo of sound.)

When carpeting areas of a school:

1. Clean old carpet before removal and clean the area thoroughly prior to installation of new carpet (otherwise the dust and dirt of the old carpet is emitted into the air system and collects onto the new carpet).
2. Assure that only approved carpets with specific properties be allowed into the school district. The following properties (and in this order of importance) are recommended: low pile density in loop carpet, low height, fluorocarbon coating of fibers, high denier per filament, and a fiber shape with a low surface area. These properties are associated with increased release and recovery of common allergens when vacuumed.
3. Area rugs and children's mats need to meet the same health standards as wall-to-wall carpeting in schools.
4. For large renovation projects, request that the manufacturer specify the adhesive, offer a warranty for volatile organic compound (VOC) emissions, and test beyond federal standards for a total VOC emission level that is less than 100 mcg/m²/hour (measured after 24 hours).
5. Use new, available non-adhesive fastening systems. If adhesive is absolutely necessary, utilize solvent-free, low VOC products.
6. Pre-ventilate carpets elsewhere for several days, when there are VOC's present.
7. Maximize ventilation during installation and isolate the area from the rest of the school (including air circulation).
8. Clean the new carpet prior to opening area to students and staff. Use HEPA filtration vacuum (to remove any loose fibers and particles resulting from the installation process).
9. Keep students and staff away from the newly installed carpets as long as possible.
10. Keep carpet away from entrances where toxins track in from the outside and water sources.

General Maintenance of Carpets

1. Area rugs and student mats need to be included with wall-to-wall carpeting as part of the district's maintenance responsibilities.
2. Provide deep, extensive vacuuming at least every other day with High-Efficiency vacuums and HEPA-style filters in order to control contaminant levels in carpets.
3. Ensure adequate, continuous ventilation throughout the carpeted space.
4. Replace wet carpets, rather than try to dry them and preserve, because of mold and mildew residues that cannot be removed.
5. Provide steam-cleaning to carpets regularly.
6. Do not consider use of the aricide "benzyl benzoate" or denaturing agent "tannic acid" at this time.
7. Replace carpeting frequently.

Section J

PLANNING & EVALUATING OUR SCHOOL ASTHMA SERVICES

Students With Chronic Illnesses: Guidance for Families, Schools, and Students

Chronic illnesses affect at least 10 to 15 percent of American children. Responding to the needs of students with chronic conditions, such as asthma, allergies, diabetes, and epilepsy (also known as seizure disorders), in the school setting requires a comprehensive, coordinated, and systematic approach. Students with chronic health conditions can function to their maximum potential if their needs are met. The benefits to students can include better attendance, improved alertness and physical stamina, fewer symptoms, fewer restrictions on participation in physical activities and special activities, such as field trips, and fewer medical emergencies. Schools can work together with parents, students, health care providers, and the community to provide a safe and supportive educational environment for students with chronic illnesses and to ensure that students with chronic illnesses have the same educational opportunities as do other students.

Family's Responsibilities

- Notify the school of the student's health management needs and diagnosis when appropriate. Notify schools as early as possible and whenever the student's health needs change.
- Provide a written description of the student's health needs at school, including authorizations for medication administration and emergency treatment, signed by the student's health care provider.
- Participate in the development of a school plan to implement the student's health needs:
 - Meet with the school team to develop a plan to accommodate the student's needs in all school settings.
 - Authorize appropriate exchange of information between school health program staff and the student's personal health care providers.
 - Communicate significant changes in the student's needs or health status promptly to appropriate school staff.

- Provide an adequate supply of student's medication, in pharmacy-labeled containers, and other supplies to the designated school staff, and replace medications and supplies as needed. This supply should remain at school.
- Provide the school a means of contacting you or another responsible person at all times in case of an emergency or medical problem.
- Educate the student to develop age-appropriate self-care skills.
- Promote good general health, personal care, nutrition, and physical activity.

School District's Responsibilities

- Develop and implement district-wide guidelines and protocols applicable to chronic illnesses generally and specific protocols for asthma, allergies, diabetes, epilepsy (seizure disorders), and other common chronic illnesses of students.
- Guidelines should include safe, coordinated practices (as age and skill level appropriate) that enable the student to successfully manage his or her health in the classroom and at all school-related activities.
- Protocols should be consistent with established standards of care for students with chronic illnesses and Federal laws that provide protection to students with disabilities, including ensuring confidentiality of student health care information and appropriate information sharing.
- Protocols should address education of all members of the school environment about chronic illnesses, including a component addressing the promotion of acceptance and the elimination of stigma surrounding chronic illnesses.
- Develop, coordinate, and implement necessary training programs for staff that will be responsible for chronic illness care tasks at school and school-related activities.

- Monitor schools for compliance with chronic illness care protocols.
- Meet with parents, school personnel, and health care providers to address issues of concern about the provision of care to students with chronic illnesses by school district staff.

School's Responsibilities

- Identify students with chronic conditions, and review their health records as submitted by families and health care providers.
- Arrange a meeting to discuss health accommodations and educational aids and services that the student may need and to develop a 504 Plan, Individualized Education Program (IEP), or other school plan, as appropriate. The participants should include the family, student (if appropriate), school health staff, 504/IEP coordinator (as applicable), individuals trained to assist the student, and the teacher who has primary responsibility for the student. Health care provider input may be provided in person or in writing.
- Provide nondiscriminatory opportunities to students with disabilities. Be knowledgeable about and ensure compliance with applicable Federal laws, including Americans With Disabilities Act (ADA), Individuals With Disabilities Education Act
- (IDEA), Section 504, and Family Educational Rights and Privacy Act of 1974 (FERPA). Be knowledgeable about any State or local laws or district policies that affect the implementation of students' rights under Federal law.
- Clarify the roles and obligations of specific school staff, and provide education and communication systems necessary to ensure that students' health and educational needs are met in a safe and coordinated manner.
- Implement strategies that reduce disruption in the student's school activities, including physical education, recess, offsite events, extracurricular activities, and field trips.
- Communicate with families regularly and as authorized with the student's health care providers.

- Ensure that the student receives prescribed medications in a safe, reliable, and effective manner and has access to needed medication at all times during the school day and at school-related activities.
- Be prepared to handle health needs and emergencies and to ensure that there is a staff member available who is properly trained to administer medications or other immediate care during the school day and at all school-related activities, regardless of time or location.
- Ensure that all staff who interact with the student on a regular basis receive appropriate guidance and training on routine needs, precautions, and emergency actions.
- Provide appropriate health education to students and staff.
- Provide a safe and healthy school environment.
- Ensure that case management is provided as needed.
- Ensure proper record keeping, including appropriate measures to both protect confidentiality and to share information.
- Promote a supportive learning environment that views students with chronic illnesses the same as other students except to respond to health needs.
- Promote good general health, personal care, nutrition, and physical activity.

Student's Responsibilities

- Notify an adult about concerns and needs in managing his or her symptoms or the school environment.
- Participate in the care and management of his or her health as appropriate to his or her developmental level.

Strategies for Addressing Asthma Within a Coordinated School Health Program

<http://www.cdc.gov/nccdphp/dash/asthma/index.htm>

Asthma-friendly schools have policies and procedures that allow students to successfully manage their asthma. Chances for success are better when the entire educational community takes part—school administrators, teachers, and staff along with the students and parents/guardians. Here are six strategies to employ when establishing a school asthma program.

1. **Establish management and support systems**

- ☐ Identify your school's or district's existing asthma needs
- ☐ Develop and implement written policies concerning asthma education and management
- ☐ Use or adapt present school health records to identify students with diagnosed asthma
- ☐ Use 504 Plans or IEPs as appropriate for health services and changes in physical activity
- ☐ Obtain administrative support and others in the school community
- ☐ Develop systems to promote ongoing communication among students, parents/guardians, teachers, school nurses, and health care providers
- ☐ Evaluate asthma program strategies and policies annually

2. **Provide appropriate school health services for students with asthma**

- ☐ Obtain a written asthma action plan for each student with asthma
 - a. Plan should be provided and signed by parents/guardians
 - b. Plan should include individual emergency protocol, medications, peak flow monitoring, environmental triggers, and emergency contact information
- ☐ Ensure that at all times students have immediate access to medications as prescribed by their physician and approved by parents
- ☐ Use standard emergency protocols for students in respiratory distress who have no asthma action plan
- ☐ Ensure that case management is provided for students with frequent school absences
- ☐ Ensure access to a consulting physician for each school

3. **Provide asthma education and awareness programs for students and staff**

- ☐ Ensure that students with asthma receive education on asthma basics
- ☐ Provide school staff with education on asthma basics, management, and emergency response as part of their professional development activities
- ☐ Integrate asthma awareness and lung health education lessons into health curricula
- ☐ Provide and/or support smoking and cessation prevention programs for students and staff

4. **Provide a safe and healthy school environment to reduce asthma triggers**

- Prohibit tobacco use at all times on school property and at all school related activities
- Eliminate indoor air quality problems by reducing or eliminating allergens and irritants
- Use integrated pest management (IPM) techniques to control pests

5. **Provide enjoyable physical education opportunities for asthma students**

- Encourage full participation in physical activities when students are well
- Ensure that students have access to preventive medications before activity and immediate access to emergency medications during activity as prescribed by their physician and approved by parents/guardians

6. **Coordinate school, family, and community efforts to better manage asthma symptoms and reduce school absences among students with asthma.**

- Obtain written parental permission for school health staff and primary care providers to share student health information.
- Educate, support, and involve family members in efforts to reduce students' asthma symptoms and school absences.
- Work with local community programs. Coordinate school and community services, including community health care providers, community asthma programs and coalitions, community counselors, social workers, case managers, and before and after school programs. Encourage interested school staff to participate in community asthma coalitions.



Adapted from: Strategies for Addressing Asthma Within a Coordinated School Health Program. Department of Health and Human Services; Centers for Disease Control and Prevention

Developing An Asthma Management Program for Your School

An asthma management program indicates a responsiveness of school personnel to meet the needs of students with asthma. Creating procedures that outline responsibilities should alleviate anxiety personnel may have about helping students who have asthma.

A management program should include:

- A plan for communicating with the parent/guardian and the medical provider.
- School policies and procedures for administering medications and initiating peak flow monitoring.
- Specific actions for school personnel to perform in the management program.

The registered professional nurse coordinates, plans, and implements an effective asthma management plan. If the school district does not employ a school nurse, it is imperative that the student's physician or health care provider and local public health department are notified for assistance.

The school nurse is responsible for the development of an Individualized Healthcare Plan (IHP), which identifies and documents an individual student's healthcare needs. Critical to the success in establishment of an IHP is the use of a systematic approach to problem-solving, particular to the nursing process and identified as the Standards of Clinical Nursing Practice (ANA, 1996). These standards are Assessment, Diagnosis, Outcome Identification, Planning, Implementation, and Evaluation. See

example IHP in First Steps section. In developing the IHP the school nurse collects the following information, which becomes a part of the overall asthma management plan:

- A comprehensive Asthma Health History (example included in First Steps Section)
- Emergency Action Plan which describes a specific plan for handling asthma episodes, including appropriate monitoring and medication procedures (2 examples included in First Steps Section)
- Procedures for student self-monitoring and administration of inhaled medications (example included in First Steps section)
- 504 plan if warranted (example included in First Steps section)



Adapted from: Missouri Association of School Nurses (1998)

How Asthma Friendly is Your School?

Children with asthma need proper support at school to keep their asthma under control and be fully active. Use the questions below to find out how well your school assists children with asthma:

1. Is your school **free of tobacco smoke** all of the time, including during school-sponsored events?
2. Does the school maintain **good indoor air quality**? Does it **reduce or eliminate allergens and irritants** that can make asthma worse? Allergens and irritants include pets with fur or feathers, mold, dust mites (for example, in carpets and upholstery), cockroaches, and strong odors or fumes from such products as pesticides, paint, perfumes, and cleaning chemicals.
3. Is there a **school nurse** in your school all day, every day? If not, is a nurse regularly available to the school to help write plans and give guidance for students with asthma about medicines, physical education, and field trips?
4. Can children take **medicines** at school as recommended by their doctor and parents? May children carry their own asthma medicines?
5. Does your school have an **emergency plan** for taking care of a child with a severe asthma episode (attack)? Is it made clear what to do? Who to call? When to call?
6. Does someone **teach school staff** about asthma, asthma management plans, and asthma medicines? Does someone **teach all students** about asthma and how to help a classmate who has it?
7. Do students have **good options for fully and safely participating in physical education** class and recess? (For example, do students have access to their medicine before exercise? Can they choose modified or alternative activities when medically necessary?)

If the answer to any question is no, students may be facing obstacles to asthma control. Asthma out of control can hinder a student's attendance, participation, and progress in school. School staff, health professionals, and parents can work together to remove obstacles and to promote students' health and education.

Contact the organizations listed for information about asthma and helpful ideas for making school policies and practices more asthma-friendly. Federal and State laws are there to help children with asthma.

Asthma can be controlled; expect nothing less.

www.nhlbi.nih.gov/health/prof/lung/asthma/asth_sch.htm

Source: National Heart, Lung, and Blood Institute,
National Asthma Education and Prevention Program
School Asthma Education Subcommittee

Top Online Asthma Resources For School Nurses

School Nurse Toolkit - AAAAI

Handouts, Slides, and Forms for School

http://www.aaaai.org/members/allied_health/tool_kit/

Food Allergy & Anaphylaxis Network

<http://www.foodallergy.org/school.html>

Managing Asthma: A Guide for Schools

National Heart, Lung, and Blood Institute

www.nhlbi.nih.gov/health/prof/lung/asthma/asth_sch.htm

Pediatric Asthma, Promoting Best Practices

AAAAI, AAP, NHLBI, NAEPP

<http://www.aaaai.org/members/resources/initiatives/pediatricasthma.stm>

School Nurse Asthma Project

Arizona Asthma Coalition CE program

<http://www.azasthma.org/providers/snap/index.htm>

Exec. Summary, NHLBI Asthma Guidelines

<http://www.nhlbi.nih.gov/guidelines/asthma/asthsumm.htm>

Full text of 1997 Asthma Guidelines [http://](http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.htm)

www.nhlbi.nih.gov/guidelines/asthma/asthgdln.htm

Detailed 2002 Asthma Guidelines Update

<http://www2.us.elsevierhealth.com/scripts/om.dll/serve?action=searchDB&searchDBfor=iss&id=jai021105b>

Allergy and Asthma Network

Mothers of Asthmatics (Parent Info)

<http://www.aanma.org>

National Association of School Nurses

<http://www.nasn.org/>

American Lung Association

<http://www.lungusa.org/asthma/index.html>

School Asthma & Allergy

Schering Plough Pharmaceutical Company

<http://www.schoolasthmaallergy.com>

Strategies for addressing school asthma

CDC, National Center for Disease Prevention

<http://www.cdc.gov/healthyyouth/healthtopics/asthma>

American Academy of Allergy, Asthma, & Immunology

pollen counts, e-mail notification, much more

611 East Wells Street

Milwaukee, WI 53202

(800) 822-ASMA

<http://www.aaaai.org>

Impact Asthma Kids CDC® & Screening Program

University of Missouri, Department of Child Health

One Hospital Drive, Columbia, MO 65212

(573) 884-8629

<http://impactasthma.missouri.edu>

Association of Asthma Educators

1215 Anthony Avenue

Columbia, SC 29201-1701

888-988-7747

<http://www.asthmaeducators.org>

Asthma Index National Heart, Lung, and Blood Institute

National Asthma Education and Prevention Program

P.O. Box 30105, Bethesda, MD 20824-0105

(301) 251-1222

<http://www.nhlbi.nih.gov/health/public/lung/index.htm>

<http://www.nhlbi.nih.gov/health/prof/lung/index.htm>

U.S. Environmental Protection Agency

Indoor Air Quality Tools for Schools

401 M Street, S.W.

Washington, DC 20460

(800) 438-4318

<http://www.epa.gov/iaq/schools/>

Asthma and Allergy Foundation of America

1125 15th Street, NW, Suite 502

Washington, DC 20005

(800) 7-ASTHMA

<http://www.aafa.org>

American Academy of Pediatrics

141 Northwest Point Boulevard

Elk Grove Village, IL 60007

(800) 433-9016

<http://www.aap.org>

Evaluating Your School Asthma Services

It takes time to improve school asthma services. Each school has different strengths and needs. The following tools can help you identify your accomplishments and target areas for improvement of school asthma services. First, review and edit the list of service goals below. Are any of these goals inappropriate for your setting? Should you add to this list?

Next, review the “School Asthma Program Evaluation Tool for Asthma Management in Schools” that follows this page. Are these items consistent with your program plan? Will your record-keeping system make it possible for you to complete this evaluation form from semester to semester and year to year? Do you want to add any other items to this form?

Finally, once a year complete the “Where Are the Gaps in Asthma Care for Children at School” survey. Discuss this with your health aides and school nurse peers. How could the identified barriers to good asthma care be removed? Develop one or two objectives for the upcoming school year. Take time to identify a specific indicator you can measure before and after you change things to determine if this component of care is improving over the coming months. Keep it simple and practical.

School Asthma Services (SAS) – Goals, School Nurse

- Supervise the administration of children’s asthma medications in the school setting: a) written asthma action plan, b) appropriate drug, dose and use, c) appropriate delivery device and technique
- Judge level of control – achieved if child tolerates physical activity, is not absent from classroom due to asthma, and child and parent report that asthma is well controlled
- Provide structured opportunities for child to learn to control their asthma
- Evaluate child’s asthma knowledge, skills, and control
- Prepare reports of child’s asthma symptoms, medicine use to aid caregivers, clinicians
- Collaborate with school staff to ensure supportive policies and healthy environment
- Identify and support the various people who help control child’s asthma

School Asthma Program Evaluation Tool

For Asthma Management in Schools

Goals for School Asthma Management

- Students with persistent asthma will have an Asthma Management Plan
(Students have persistent asthma if they take daily asthma medication or they have asthma symptoms 2 or more times a week)
- Staff providing direct care to children with asthma will participate in an annual continuing education program regarding asthma
- Teachers, coaches, playground personnel, bus drivers and music instructors will participate in an annual in-service addressing asthma
- Children with persistent asthma will complete a formal asthma self management education program
- No avoidable 911 calls from school related to asthma symptoms

Basic School Asthma Service Indicators

| | Beginning of School Year | End of First Semester | End of Second Semester |
|---|--------------------------|-----------------------|------------------------|
| Total Number of Students Identified with Asthma | _____ | _____ | _____ |
| Percent of students with asthma (# with asthma/Total students x 100) | _____ | _____ | _____ |
| Total Number of students with meds for asthma at school | _____ | _____ | _____ |
| Total Number of student taking asthma medications at school | _____ | _____ | _____ |
| Total Number of students identified with persistent asthma (Those students with "yes" answers on the medication administration form) | _____ | _____ | _____ |
| Number of Students with an Asthma Management Plan | _____ | _____ | _____ |
| Number of 911 calls made from school for asthma symptoms | _____ | _____ | _____ |

Asthma Training:

| | | | |
|--|-------|-------|-------|
| Number of asthma training sessions offered to staff How many staff attended | _____ | _____ | _____ |
| Number of asthma training sessions offered to parents How many parents attended | _____ | _____ | _____ |
| Number of asthma training sessions offered to students How many students attended | _____ | _____ | _____ |

Where are the Gaps In Asthma Care for Children at School? (School nurse)

Please rate each item below using the following scale, circling your answer:

| | | | | | |
|-------|--------|-----------|---------|-------|--------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Never | Seldom | Sometimes | Usually | Often | Always |

1) I have current asthma action plans and medication administration authorization forms for children with asthma who require medication at my school.

| | | | | | |
|-------|--------|-----------|---------|-------|--------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Never | Seldom | Sometimes | Usually | Often | Always |

2) I have and use age-appropriate asthma instructional materials for individual children at my school(s).

| | | | | | |
|-------|--------|-----------|---------|-------|--------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Never | Seldom | Sometimes | Usually | Often | Always |

3) I document students' inhalation technique and coach children to improve their use of inhaled asthma medicines.

| | | | | | |
|-------|--------|-----------|---------|-------|--------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Never | Seldom | Sometimes | Usually | Often | Always |

4) I have a written emergency plan for children with asthma at my school(s).

| | | | | | |
|-------|--------|-----------|---------|-------|--------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Never | Seldom | Sometimes | Usually | Often | Always |

5) I provide written reports to parents of children who have asthma to share information concerning their symptoms and medication use at school.

| | | | | | |
|-------|--------|-----------|---------|-------|--------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Never | Seldom | Sometimes | Usually | Often | Always |

6) A child with asthma at my school(s) will complete a formal asthma self-management course that I coordinate at least every other year.

| | | | | | |
|-------|--------|-----------|---------|-------|--------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Never | Seldom | Sometimes | Usually | Often | Always |

7) I report students' asthma symptoms, medication use, other information to prescribing clinicians. This report influences future care and improves control.

| | | | | | |
|-------|--------|-----------|---------|-------|--------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Never | Seldom | Sometimes | Usually | Often | Always |

8) I interview families of children who have asthma to complete a school asthma action plan and to discuss special needs or concerns.

| | | | | | |
|-------|--------|-----------|---------|-------|--------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Never | Seldom | Sometimes | Usually | Often | Always |

9) I work with a community worker and parents when the need for home-based resources is apparent for children with asthma.

| | | | | | |
|-------|--------|-----------|---------|-------|--------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Never | Seldom | Sometimes | Usually | Often | Always |

10) Parents notify me at school when children are experiencing a worsening pattern of asthma symptoms at home.

| | | | | | |
|-------|--------|-----------|---------|-------|--------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Never | Seldom | Sometimes | Usually | Often | Always |

11) When I have questions about asthma I am able to get help by phone from a knowledgeable clinician.

| | | | | | |
|-------|--------|-----------|---------|-------|--------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Never | Seldom | Sometimes | Usually | Often | Always |

12) I work with school staff to address environmental and policy issues effecting children who have asthma.

| | | | | | |
|-------|--------|-----------|---------|-------|--------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Never | Seldom | Sometimes | Usually | Often | Always |

13) I coordinate asthma education for school staff, students and parents to equip those who provide direct care and to enhance professional and public awareness.

| | | | | | |
|-------|--------|-----------|---------|-------|--------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Never | Seldom | Sometimes | Usually | Often | Always |

14) I contact parents when children with asthma are often absent to discuss their concerns and to determine the cause of absenteeism.

| | | | | | |
|-------|--------|-----------|---------|-------|--------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Never | Seldom | Sometimes | Usually | Often | Always |

15) I assure that a current "School Asthma Action Plan" is included in students IEP or 504 Plan.

| | | | | | |
|-------|--------|-----------|---------|-------|--------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Never | Seldom | Sometimes | Usually | Often | Always |

16) I have attended a helpful continuing education offering concerning the practical management of school asthma in the last three years.

| | |
|----|-----|
| 1 | 2 |
| No | Yes |

17) There is strong administrative support for appropriate school asthma services in my district.

| | | | | | |
|-------|--------|-----------|---------|-------|--------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Never | Seldom | Sometimes | Usually | Often | Always |

18) In my view the principal gaps in pediatric asthma care in my school(s) are:

APPENDIX

APPENDIX

National Association of School Nurses

Issue Brief

School Health Nursing Services Role in Health Care

Asthma Management in the School Setting

Introduction:

In the United States, 17.3 million people of all ages have asthma, according to estimates by the Centers for Disease Control and Prevention. One child in 13 (about 5 million) has been diagnosed with asthma, making it the most common chronic illness of childhood (Adams & Marano, 1994). Over the last 15 years, pediatric asthma has also increased in severity as well as in numbers. Although asthma affects children of all backgrounds, children in minority groups are more highly represented among the groups of those with this disease.

The noted increase in pediatric asthma is thought to be due to a combination of factors: better recognition and diagnosis of the condition at younger ages; changes in the prevalence and distribution of risk factors (obesity, single parent families, poverty, racial minority status, and decreased physical activity); increased time spent indoors in tightly sealed buildings; increased exposure to air pollution; and an increased prevalence of allergies (U.S. Department of Health and Human Services, 2000).

Background:

Asthma is an inflammatory lung condition in which the airways become blocked or narrowed. It is characterized by acute episodes, or attacks, of breathing problems that include coughing, wheezing, chest tightness, and shortness of breath. These symptoms are caused by three primary factors: airway muscle tightening, airway swelling, and mucus-blocked airways associated with increased airway responsiveness to a variety of stimuli, or “triggers”. The triggers that cause an asthma episode vary both within and across individuals, but many with this disease experience an increase in asthma symptoms when exposed to the following:

- Allergens, such as pollen, animal dander, dust mites, cockroaches, and molds.
- Irritants, such as cold air, strong odors, chemicals, indoor and outdoor pollutants, weather changes, and cigarette smoke.
- Upper respiratory infections.
- Physical exercise, especially when there are changes in weather, including changes in temperature, humidity, and wind.
- Ambient temperature changes, such as going out into cold air, or coming in from the heat into cool air.
- Strong emotions, such as hard laughing or crying.

Although psychological factors, such as stress, are not sufficient to cause asthma symptoms alone, stress can potentiate wheezing in those predisposed to or with the disease. Recurrent episodes of asthma can range in severity from inconvenient to life threatening.

It is estimated that in the United States, costs related to asthma were at least \$12.7 billion in 2000 (Public Policy Advisory Board, 2002). Direct costs include medical expenditures associated with hospitalizations, doctors' visits, and medications. Each year two million people are treated in emergency rooms and approximately 500,000 are hospitalized for their asthma. In 1998, children 0-17 years had 5.8 million visits to doctors' offices and hospital outpatient departments (Public Health Policy Advisory Board, 2002). All too often, after a health-care provider office visit, an emergency room visit, or a hospitalization, these children are present with wheezing and/or cough in the school health room. Not infrequently, the school nurse has never been told about the child's diagnosis or the children arrive at school with asthma medications, no instructions, and little understanding of their use.

In the United States, the majority of the population spends 90 percent (about 20 hours a day) of their time indoors. Each day, one in five Americans, mostly children, spends the day in a school building. Because children breathe more rapidly and inhale more pollutants per pound of body weight than adults, children are especially vulnerable to respiratory hazards that may be in the air in and around their schools and homes. Therefore, reducing exposure to both indoor and outdoor environmental asthma triggers is an important step in controlling this condition.

Asthma also impacts children's quality of life. Asthma accounts for more than 100 million days of restricted activity annually and contributes to avoidance of school and activities. Children who have had interrupted sleep due to nighttime asthma symptoms come to school tired and may fall asleep in the classroom. They can also be lethargic or irritable. Additionally, students who experience difficulty in breathing find it difficult to concentrate on schoolwork, and those who need breathing treatments during school hours miss class time. When severe episodes occur, children also miss time from class and school. Furthermore, the side effects from some medications used in the treatment of asthma can interfere with performance and concentration as well, particularly when the child's medication regimen is not well-managed or monitored (Environmental Protection Agency, 2001).

Indirect costs from the burden of asthma are attributed to lost workdays, school absences, and decreased productivity. An estimated 11.8 million missed school days per year are attributed to asthma (Weiss, Sullivan, & Lyttle, 2000), making it the leading cause of school absenteeism due to a health condition. Other indirect costs include caretaker's lost workdays and costs associated with asthma deaths. With 5,000 deaths—246 in children—occurring each year from asthma, the seriousness of this disease cannot be overlooked. And, both hospitalization and death rates among young children are increasing (Centers for Disease Control, 2001; U.S. Department of Health and Human Services, 2001).

Rationale:

The National Association of School Nurses believes that:

- Every child should have access to a school nurse at a ratio of no more than 1:750. This ratio is particularly critical for children with a potentially life-threatening condition like asthma.
- The effective management of childhood asthma includes four components (American Academy of Allergy, Asthma & Immunology, 1999):
 - Regularly assessing and monitoring asthma, including use of objective measures of lung functioning.
 - Controlling factors that trigger asthma episodes and contribute to asthma severity.
 - Adequately managing asthma with pharmacologic therapy.
 - Educating asthma patients and their parents to become partners in their own care.
- The school nurse has an active role in coordinating effective asthma management in the school setting using a coordinated school health program approach and collaborating with local health-care providers and asthma-related organizations and agencies to ensure that asthma care is appropriately integrated throughout the child's school activities.
- The school nurse is an effective change agent in the student's mastery of his/her self-management of asthma.
- Children have the right to easily accessible quick relief inhalers, including the right to carry these inhalers and self-administer medications when developmentally able.
- The school nurse has the responsibility to encourage and promote communication about the child's asthma among parents, school staff, and health-care providers.
- The best way to provide optimal care for children is for health-care providers to effectively communicate with one another about the child's care. Health-care providers at emergency rooms and clinics should obtain permission from the parent/guardian to share Asthma Action Plans directly with the school nurse.

Role of the School Nurse:

School nurses play an important role in serving as a liaison between the school and child's home and between the school and health-care providers in efforts to promote adherence with health-care providers' orders related to asthma management. The school nurse develops and implements, in coordination with local providers and the coordinated school health team members, the child's asthma management plan; establishes and monitors compliance with school policy related to the management of children at school and during school-related activities; develops protocols for the care of children with acute respiratory distress at school; provides or supervises proper medication administration; supports education of the child in self-management; monitors the child's condition; advocates for the child's inclusion in school-related activities; and works with school staff to assure that accommodations are in place for the child's well-being.

Using the four components of asthma care, there are numerous ways for the school nurse to contribute to the effective management of students with asthma in the school setting by:

- Educating the student and his/her family in asthma management, including content about pathology, pharmacology, environmental irritants and allergens, and proper use of treatment and management devices, such as peak flow meters, metered dose inhalers, and nebulizers.
- Delivering developmentally-appropriate asthma self-management skill lessons.
- Developing asthma care plans and asthma action plans in collaboration with the student, his/her family, school staff, and the student's health-care provider.
- Gathering asthma materials and resources for students, parents, and staff and disseminating these appropriately through a variety of media.
- Developing an asthma management policy or plan for the school that includes plans for respiratory emergencies and the management of acute asthma episodes at school, school-related activities, and crisis situations.
- Educating school staff about the effective use of individual asthma action plans.
- Educating the school board, school community, and school staff about asthma and asthma triggers in the school that need to be controlled and decreasing exposure to allergens and irritants by educating school staff about how its activities affect air quality.
- Proposing the development of indoor air quality teams in the school so that school staff is involved in making necessary changes to improve air quality.
- Working with local community groups to mobilize community resources for a comprehensive, culturally and linguistically competent approach to controlling asthma.
- Collaborating with health-care providers to secure permission from parents to mail information directly to school nurses.
- Collaborating with emergency rooms and hospitals to provide a copy of discharge orders for the school nurse.
- Helping parents understand the importance of sharing appropriate information about the child's asthma with the school nurse and others in the school community involved with the child, including teachers, school staff, coaches, on-site or after-school day care providers, etc.

Source: National Association of School Nurses, available at <http://nasn.org/briefs/asthma.htm>

National Association of School Nurses

Position Statement

The Use of Asthma Inhalers in the School Setting

History:

The number of diagnosed cases of asthma is increasing each year. Inhaled medication is frequently used to manage the condition and treat acute exacerbation.

Description of Issue:

Early recognition and prompt treatment of symptoms are vital to the management of asthma.

Rationale:

School district medication policies must be developed with the safety of all students in mind. Easy access to and correct use of asthma inhalers are necessary to avoid serious respiratory complications secondary to acute exacerbation and to improve the quality of life of students with asthma.

Conclusion:

It is the position of the National Association of School Nurses to support the self management of asthma, including the use of prescribed, inhaled medications on a case-by-case basis with parent, physician, school nurse and, if appropriate, student involvement. Self-managed administration of inhaled medication for asthma must be evaluated by the school nurse. Written permission from the parent and physician must be obtained. A written individual health care plan that includes continuous monitoring and evaluation by the school nurse must be maintained for every student who self-administers inhaled medications.

Adopted: June 1993

Revised: June 1999

Source: National Association of School Nurses, available at <http://nasn.org/positions/asthma.htm>

National Association of School Nurses

Position Statement

The Role of School Nurses in Allergy/Anaphylaxis Management

History:

Anaphylaxis can be deadly to children as well as adults. Among the general population, one to two percent are described as at risk for anaphylaxis from food and insects and a somewhat lower percentage are at risk from drugs and latex. Approximately five to six percent of the general pediatric population have an incidence of food allergy, with eight foods (peanuts, shellfish, fish, tree nuts, eggs, milk, soy, and wheat) accounting for 90% of allergic reactions. Food allergies are, in fact, the leading cause of anaphylaxis outside the hospital setting, accounting for an estimated 30,000 emergency room visits annually. It is estimated that 100 to 200 people die each year from food allergy-related reactions, and approximately 50 people die from insect sting reactions.

Description of Issue:

Care must be taken to differentiate between a true allergic response and an adverse reaction. True allergies result from an interaction between the allergen and the immune systems. Anaphylaxis is a potentially fatal reaction of multiple body systems. It can occur spontaneously. Data clearly demonstrate that fatalities associated with anaphylaxis occur more often away from home and are associated with the absence or delayed use of epinephrine.

Rationale:

Education and planning are key to establishing and maintaining a safe school environment for all students. Those responsible for the care and well-being of children must be aware of the potential dangers of allergies. Prevention of allergy symptoms involves coordination and cooperation within the entire school team and should include parents, students, school nurses, and appropriate school personnel. Early recognition of symptoms and prompt interventions of appropriate therapy are vital to survival.

Conclusion:

It is the position of the National Association of School Nurses that schools have a basic duty to care for students, utilizing appropriate resources and personnel. School nurses are uniquely prepared to develop and implement individualized health care plans within state nurse practice act parameters and to coordinate the team approach required to manage students with the potential for experiencing allergic reactions.

Source: National Association of School Nurses (2001). For
References, see website <http://nasn.org/positions/allergy.htm>

National Association of School Nurses

Position Statement

Emergency Care Plans for Students with Special Health Care Needs

History:

Students with special health care needs may be at greater risk for a medical emergency. Students with special needs may come to school with equipment, procedures, and technology. Schools, communities, and families have the responsibility to be well prepared for prompt, safe, and individualized care in the event of a medical emergency.

Description of Issue:

An Emergency Care Plan is usually a set of procedural guidelines that provide specific directions about what to do in a particular emergency situation. Students with special health care needs may have both an ECP and an Individualized Healthcare Plan (IHP). The ECP may be formulated as part of the IHP or Individualized Educational Plan (IEP). The ECP should never be considered a substitute for a full IHP that addresses the student's needs. The professional school nurse has the expertise to make a complete assessment of the child to determine what will be done and what results to expect.

Rationale:

A written Emergency Care Plan promotes quality school nursing services. The plan includes specific information about the child's medical condition, current and emergency medications and appropriate emergency intervention. When an emergency occurs, school nurses, school personnel, and emergency care providers have the information needed to provide appropriate care to the child without delay.

Conclusion:

It is the position of the National Association of School Nurses that each student with a special health care need that puts him/her at a greater risk for medical emergency should have an Individualized Emergency Care Plan. NASN also believes that the professional school nurse should be responsible for writing the ECP in collaboration with the student, family, and health care providers.

Source: National Association of School Nurses (Adopted June, 1998)
For references, see website: http://nasn.org/positions/emer_care.htm

National Association of School Nurses

Position Statement

Indoor Air Quality

History:

During the last several decades, exposure to indoor air pollution (IAP) has increased due to a variety of factors, the construction of more tightly sealed buildings, reduced ventilation rates to save energy, the use of synthetic materials in buildings and furnishings and the use of chemicals in various products. Environmental Protection Agency (EPA) studies of human exposure to air pollutants indicate that indoor levels of pollutants may be two to five times and occasionally 100 times more than outdoor levels of pollutants. This situation is a concern because most people spend about 90% of their time indoors.

Description of the Issue:

Air quality problems can be subtle and do not always produce easily recognizable impacts on health, well being, or the physical plant. Children may be especially susceptible to IAP. They have a smaller body mass than adults and breathe a greater volume of air relative to their body weight. The concentration of pollutants can, therefore, result in a greater body burden for children. Proper maintenance of indoor air is more than a “quality” issue, it encompasses safety and stewardship of our investment in the students, staff, and facilities.

Factors affecting indoor air quality include indoor air pollutants, heating ventilation/air conditioning systems, pollutant pathways, and building occupants. EPA risk studies have consistently ranked IAP among the top five environmental health risks to the public. Consequences of IAP problems in schools include:

- increasing the potential for long-term and short-term health problems for students and staff,
- impacting adversely the student learning environment, comfort, and attendance,
- reducing productivity of teachers and staff due to discomfort, sickness, or absenteeism,
- accelerating deterioration and reducing efficiency of the school physical plant and equipment,
- increasing the potential that schools will have to be closed or occupants temporarily relocated,
- straining relationships among school administration, parents, and staff,
- creating negative publicity that could damage a school’s or administration’s image and effectiveness, and
- creating potential liability problems.

Additionally environmental quality is one of ten health indicators used in *Healthy People 2010*.

Rationale:

School nurses are skilled in epidemiology techniques and can use those skills to detect indicators of potential indoor air quality problems. School nurses also possess the health education skills to provide accurate information about sources and effects of indoor air contaminants and proper control techniques.

Conclusion:

It is the position of the National Association of School Nurses that the school nurse is in the unique position to work with administration, maintenance personnel and other health professionals in detecting, monitoring and elimination sources of indoor air contaminants. School nurses possess the knowledge and skills to be proactive in educating students, staff, and parents on indoor air quality issues.

Source: National Association of School Nurses (NASN), 2000. References available at website: <http://nasn.org/positions/indoorairquality.htm>

National Association of School Nurses

Position Statement

Using Assistive Personnel in School Health Services Programs

History:

The health-related needs of students are intensifying in our nation's schools. Student safety is the primary concern in determining whether or how assistants should be used to help professional school nurses deliver increasingly needed health services to students.

Description of Issue:

Assistive personnel serve as school nurse extenders by supporting the nurse in the health office, performing clerical functions, and carrying out certain delegated nursing activities on behalf of students. State Nurse Practice Acts and regulations promulgated pursuant to practice acts determine the scope of nursing practice and what nursing activities can be delegated or given to assistive personnel. People employed by the school district may have partial or total responsibility for assisting licensed, registered professional school nurses. These support staff include: unlicensed assistive personnel (UAP), such as school staff, clerical aides, and health/nursing assistants or aides (HA); licensed paraprofessionals, known as licensed practical nurses (LPN) or licensed vocational nurses (LVN); and registered nurses (RN) who do not meet their state's or school district's requirements for qualification as a school nurse. Each type of support staff has unique qualities and limitations as described below:

1. School staff whose job is to deliver, support, or manage education are the least qualified to assist the school nurse in providing physical health care to students. They lack health-specific training, and their job focus may not allow them to devote the care and attention needed to safely deliver health services.
2. Clerical aides who only provide clerical support to the health services program should not be expected to provide direct student health care. They require supervision by the school nurse; and in addition to general clerical training, they will need on-the-job training in such areas as school records management and confidentiality.
3. HAs, at minimum, should have a high school diploma, current certification in CPR and first aid, and on-the-job-training in such subjects as confidentiality and infection control. If the state requires a specified curriculum or certification for nursing/health assistants, HAs in schools must also meet these state regulations. Under virtually all state nurse practice acts, RNs are responsible for directing, delegation to, and supervising these UAPs.

4. LPNs and LVNs usually complete a 12-month course of study beyond high school and pass state licensure, which allows them to practice on a technical level of nursing. LPNs and LVNs can contribute to each step of the nursing process, but cannot independently assess the health status of any student or the student's environment, make a nursing diagnosis, develop the plan of care, or determine when delegation of care to a UAP is appropriate. They work in a team relationship with the registered professional school nurse. Although states may vary in both scope and practice and degree of supervision needed, virtually all state nurse practice acts require that an RN supervise these technical nurses.
5. RNs who do not meet the education and experience qualifications stipulated by the state's department of education or the school district to work as school nurses are nonetheless licensed by the state's board of nursing to practice nursing independently. The school nurse should be responsible for evaluating the outcomes of nursing services for all students, making suitable assignments to the RN, and providing supervision appropriate to the situation.

Key factors for effective and competent use of assistive personnel are role definition, adequacy of training, and appropriate delegation and supervision. School nurses, in collaboration with school and district administration, should develop clear, limited, written practice descriptions and then ensure adequate training and competency to perform identified tasks. Assistive personnel may not be required to make clinical assessments or nursing judgments or to implement nursing tasks requiring licensure. There should be written protocols for handling specific student health issues, with directions for particular signs and symptoms that must be reported to the school nurse. When the school nurse delegates responsibilities, the nurse must be available to provide direction, supervision, and immediate intervention in a situation as needed. State law, regulations, standards, and rules set by state boards of nursing may determine whether off-site supervision of assistive personnel by RNs is an option. If state-permitted, the school nurse determines when off-site supervision is safe and how frequently on-site supervision is indicated.

It is important that the following issues are considered when using assistive personnel in schools:

- State nurse practice acts, including but not limited to scope of practice and to licensure, delegation, and supervisory responsibilities of RNs in relationship to LPN/LVNs and to certified or registered nursing assistants
- School nurse certification requirements under state education statutes and regulation
- Scope and standards of school nursing practice
- School district job descriptions that are legally appropriate to the level of preparation, expectations, and experiences of the assistive personnel
- State and NASN staffing guidelines that consider various safe staffing mixes in relation to the health needs of the student population

Rationale:

The use of assistive personnel can extend the delivery of health services, but when used to replace professional health care providers, it leads to reduced quality of care to students. For staffing or budgetary reasons, assistive personnel are a necessary adjunct to many school health services programs; and if properly trained and supervised, they can enhance services to students and increase the cost-effectiveness of the program. Staffing decisions must be based on the assistive services needed, scope of practice,

competencies, the RNs legal relationship to the assistant, and the amount of time required for on- and off-site supervision. Improved staffing of health services programs seems to result in healthier children who attend school and are more available for learning. While the use of assistive personnel may be an acceptable alternative enhance this staffing, their improper use can not only compromise students' quality of care, but also create liability for the district and/or nurse.

Conclusion:

It is the position of the National Association of School Nurses that the use of assistive personnel may be appropriate to supplement professional school nursing services in certain situations, but they should never supplant school nurses nor be permitted to practice nursing without a license. The professional school nurse should take the lead in helping school districts appropriately determine whether and how to use assistive health personnel. The school nurse is the only one who is trained and capable of assessing the health needs of the student population and the only one who can legally delegate nursing activities to unlicensed persons. Appropriate nurse to assistant ratios and on-site supervision are essential for ensuring safe delivery of nursing services to students.

Source: National Association of School Nurses,
available at <http://nasn.org/positions/assistive.htm>

National Association of School Nurses

Issue Brief

School Health Nursing Services Role in Health Care

Delegation of Care

The National Association of School Nurses believes that every student has the right to receive health care that is planned, provided, and/or supervised by a registered school health nurse. Fundamental to this process is the presence of an adequate number of school health nurses. The school health nurse has sole responsibility and authority within the educational setting to delegate nursing services that promote the health and safety of school-age children.

“Delegation is the transfer of responsibility for the performance of an activity from one individual to another while retaining accountability for the outcome” (ANA, 1992). Nursing tasks and nursing procedures may be delegated solely by the supervising school health nurse based upon professional judgment; however, the professional nursing judgment of Assessment, Evaluation, and Care Planning may not be delegated.

The school health nurse is a licensed registered nurse whose ability to delegate is governed by laws, statutes and regulations found in the state nurse practice act and other laws within the practice jurisdiction.

Decisions are guided by:

- School Nursing Practice: Roles and Standards (NASN, 1993)
- NASN position statement regarding delegation (NASN, 1994)
- ANA and NASN Code of Ethics
- State school nurse certification

Delegation of nursing services by a non-nurse and/or performance of nursing services without nurse supervision may constitute the practice of nursing without a license (NCSBN, 1990). The right to delegate nursing tasks, when not granted by the state nurse practice act, requires statutory authorization.

Primary consideration in the delegation of care is the health, safety and welfare of the school-age child. The school health nurse’s judgment regarding delegation is based on assessment of:

- health care needs of the individual student
- health care needs of the school population
- nature, frequency and complexity of the specific task
- physician orders
- availability of adequate supervision
- education, training and skills of the unlicensed assistive personnel

The school health nurse safeguards the student's well being by assuring the unlicensed assistive personnel will receive adequate training and will provide care under on-going supervision and evaluation. Minimal training and education include nursing instruction with demonstration of the specific task, followed by the return task demonstration by the unlicensed assistive personnel in the educational setting under direct nursing supervision and evaluation.

Supervision is the active process of directing, guiding and influencing the outcome of an individual's performance of an activity. Supervision is generally categorized as on-site (the school health nurse is physically present and immediately available while the task is performed) or off-site (the school health nurse has the ability to provide direction through various means of written and verbal communication) (ANA, 1992). The relationship between delegation and supervision legally and administratively requires that appropriate supervision be available during task implementation.

School policy regarding delegation should be promulgated. The procedural guidelines are written, recorded, accessible to all, and indicate:

- extent and type of supervision required
- safety and emergency guidelines
- development of an individualized health care plan for each student
- documentation requirements

The authority and responsibility of the school health nurse to delegate can offer a means for expanded services in the delivery of health services in the educational setting.

National Association of School Nurses

Position Statement

Delegation

History:

Advances in health care and technology offer greater opportunities for children with special health care needs to attend school. Considering the complexity of the care needed by these students, delegation of care by the school nurse to an unlicensed person in the school setting, if allowed by the state's nurse practice acts, can be a safe and fiscally responsible way to meet the health needs of the school community. Nevertheless, the school community must be aware that, to ensure the safety, health, and educational success of these students, there are limitations to the use of delegation.

Description of Issue:

The incidence of chronic illnesses (e.g., asthma, diabetes, attention deficit disorder) in school-age children is increasing. In addition, complex medical problems that were at one time only managed at inpatient settings are now being managed in the community, including the school setting. Federal mandates and parental expectations that the school is indeed able to manage their child raises the demands for qualified personnel to ensure the health and safety of students with special health needs.

Delegation has been defined as “the transfer of responsibility for the performance of an activity to another, with the former retaining accountability for the outcome” (ANA, 1994, 11). Guidelines and standards for delegation of nursing care are further defined by each state's nurse practice act and its associated rules and regulations. Some states and territories restrict the procedures that can be delegated; others do not allow delegation at all.

Delegation of nursing care is a complex legal and clinical issue in any setting, and is especially challenging in schools. It is the school nurse who must have a clear understanding of what constitutes his or her scope of practice to ensure that state nursing practice acts are not violated, and to make certain that school health and safety are not threatened. In turn, this knowledge needs to be communicated to parents, administrators, school staff, and students to ensure they understand the legal and professional issues involved in delegation.

Rationale:

Only a registered nurse can delegate nursing care. It is critical that the school nurse be involved in district policy development that addresses the issue of delegation of care in the school setting. The school nurse is responsible for using professional nursing judgment to determine the appropriate level of care needed for each student, including whether or not tasks can be delegated. Once the school nurse determines that a task can indeed be delegated (based on the definition of delegation, guidelines provided by the state's nurse practice act, and assessment of the unique characteristics of the individual student needing nursing services), an appropriate staff person must be chosen.

By definition, a delegated nursing service requires that the nurse train and supervise the delegated staff member and the health outcome of the student. The training must be documented. The documentation must reflect that the delegated staff understands what needs to be done and demonstrates proficiency in performing the delegated task for each student. Ongoing and regular evaluation by the registered nurse is required in accordance with state, district, and/or school policy. The school nurse must take appropriate actions when the delegated staff is unsafe in performing delegated tasks.

Conclusion:

The National Association of School Nurses supports appropriate delegation of nursing services in the school setting, based on the definition of delegation, guidelines provided by state nurse practice acts, guidelines provided by the school nurse consultants council and the nursing assessment of the unique needs of the individual student. Only registered nurses can delegate nursing care in the school setting. The school nurse shall be involved in the development of school district policy and procedures related to delegation of care, to promote an understanding of the complex legal and clinical issues that surround delegation of care.

The health, safety, and welfare of the student must be the primary consideration in any decision to delegate. The school nurse making such a decision must be familiar with applicable nursing standards, the state's nursing practice act, and other applicable state and federal mandates. The school nurse must also be familiar with pertinent state education, public health and pharmacy laws and regulations.

Source: National Association of School Nurses (2003). References available at NASN website: <http://nasn.org/positions/delegation.htm>

National Association of School Nurses
Issue Brief
School Health Nursing Services Role in Health Care

School Nurses and the
Individuals with Disabilities Education Act (IDEA)

Introduction

The Individuals with Disabilities Education Act (IDEA) grants to eligible children with disabilities the legal right to receive a free appropriate public education in the least restrictive setting. For an increasing number of children with disabilities, access to education is only achieved through the provision of necessary health services (e.g., administration of intravenous medications, catheterization, tracheostomy care, gastrostomy tube feedings). The National Association of School Nurses (NASN) believes that such children have the right to receive the specialized health services required to assure their inclusion and safety in the school environment. These services should be provided or supervised by a Registered Professional Nurse.

Background

The Education of All Handicapped Children Act (EHA) was passed as law in 1975. It established national standards for public education of children with disability-related learning problems. In 1990, the EHA was renamed the Individuals with Disabilities Education Act and is now usually referred to as IDEA. Congress made amendments to IDEA in 1997. This federal legislation directs educational interventions for children 3 through 21 years of age who have qualifying disabilities that impede their ability to learn. Eligible students are entitled to support services at school. These are known as “related” services. The federal regulations provide definitions for the eligibility criteria and specific related services. The definitions should be considered “educational definitions.” In health care, these conditions and services may be defined differently (Schwab, 2001, 387).

Children with health conditions may become eligible for services if the child’s disability has an impact on his or her educational performance. A multidisciplinary team determines eligibility and necessary services. The school nurse is a crucial member of this multidisciplinary team. Because children with chronic and special health care needs have unique health considerations, individualized nursing assessment, planning, and intervention are critical to identifying appropriate placement and service decisions. The team determines the health services necessary to enable children with disabilities to attend school and to participate fully and safely in educational activities and programs. The team develops an appropriate educational program, known as an Individualized Education Program (IEP) or an Individualized Family Service Plan (IFSP) for eligible children ages 3-5 years.

The 1997 IDEA amendments included a definition of IEP team members that did not include specification about the participation of a professional nurse. In many jurisdictions, school nurses are not included in the multidisciplinary team that develops and implements a student’s IEP or IFSP. In these areas, specialized health services either are not included, or are improperly and dangerously performed by individuals who lack requisite training and supervision. The Congressional Record, in the preface to IDEA 1997, did

record that there are situations that merit a licensed registered nurse being on the IEP team (Committee on Labor and Human Resources, U.S. Senate, 1997, in Gelfman & Schwab, 2001).

State licensing laws for health care professionals identify and define professionals slightly differently from state to state. State educational certification regulations or other mandates regarding qualifications of school nurses may also add to differences in interpretation of “qualified school nurse or other qualified person” (Gelfman & Schwab, 2001, 393). Nurse Practice Acts (NPA) need to be reviewed to ascertain what is allowed in a particular state.

No federal law or regulation dictates who must perform certain health care procedures (Rapport & Lasseter, 1998). States’ Nurse Practice Acts and other laws set forth these requirements. Delegation of nursing care to unlicensed assistive personnel may be appropriate in situations when proper assessment, training, and continued supervision can occur. Sometimes school nurses are asked to provide or delegate services that may not be delegated under that state’s Nurse Practice Act. The parent or school personnel may never assume responsibility for delegating procedures requiring skilled nursing care. These actions would be considered practicing nursing or medicine without a license and could be subject to disciplinary action (Hootman & Hula, 2001).

Adding the professional school nurse to the related services section of IDEA and including the school nurse in the multidisciplinary team would assure that the specialized health services needed for eligible children with disabilities to participate fully in their educational program are safely and appropriately provided.

Rationale

Congressional notes regarding the 1997 IDEA Reauthorization document the intent to include school nursing as “related services.” The school health services, provided by “a qualified school nurse or other qualified person,” are considered to be “Related Services” under IDEA, regardless whether these services require a nurse for one-half hour per week or one-on-one throughout the school day.

The 1999 United States Supreme Court ruling in *Cedar Rapids Community School District v. Garret F.* (hereinafter known as “Garret F.”) held that the Individuals with Disabilities Education Act (IDEA) requires school districts to provide nursing services when such supportive services are necessary in order for students to access and benefit from their educational program.

For children with chronic or special health care needs and their families, the interaction with the educational system is often complex because many people are involved in the process and multifaceted regulations must be addressed. The school nurse is bilingual in health and education and can serve as a natural interpreter to the student, family, and health and education systems, on students’ special health needs during the school day.

It is the position of the National Association of School Nurses that each student with a relatively complex health condition or a need for modification of the school environment due to a health condition should have an IHP. It is also the position of the NASN that the professional school nurse should be responsible for the writing of the IHP in collaboration with the student, family, and health care providers (NASN, 1998).

The school nurse plays a vital role in applying Garret F. and IDEA and in explaining their implications on administrative decisions about policy, staffing, collaborative decision-making, and clinical nursing practice in the schools (NASN, 2001).

Role of the School Nurse

The school nurse is a team member who participates in the identification and evaluation of students who may be eligible for services under IDEA. Through shared responsibility with other team members, the professional school nurse assists in the planning and implementation of Individual Education Plans or Individual Family Service Plans as needed.

The professional school nurse, one of the related service providers under IDEA, ensures the delivery of necessary health services to eligible children with disabilities through participation on the multidisciplinary educational team. The school nurse as a member of this multidisciplinary education team:

- assists in identifying children who may need special educational or health related services.
- assesses the identified child's functional and physical health status, in collaboration with the child, parent(s)/guardian(s) and health care providers
- develops individualized health and emergency care plans.
- assists the team in developing an Individual Education Plan (IEP) that provides for the required health needs of the child, which enables the student to participate in his/her educational program.
- assists the parent(s) and child to identify and utilize community resources.
- assists the parent(s) and teachers to identify and remove health related barriers to learning.
- provides in-service training for teachers and staff regarding the individual health needs of the child.
- provides and/or supervises unlicensed assistive personnel to provide specialized health care services in the school setting.
- evaluates the effectiveness of the health related components of the IEP with the child, parent(s), and other team members, and makes revisions to the plan as needed.
- participates in the identification and evaluation of students who may be eligible for services under IDEA. Through shared responsibility with other team members, the professional school nurse assists in the planning and implementation of Individual Education Plans or Individual Family Service Plans as needed.
- develops student goals and objectives and nursing protocols to meet student specific health needs during a school day, monitors student progress, and initiates an IEP reassessment when indicated.
- serves as the team liaison to the medical community.

Established 1996
Revised 2002

Source: National Association of School Nurses (2002).
For references see website: <http://nasn.org/briefs/idea.htm>

National Association of School Nurses

Position Statement

Case Management of Children with Special Health Care Needs

History:

Both the historic and contemporary role of the school nurse has included case management for children with special health care needs. Delivery of health care in the school setting requires the coordination of multiple health and non-health related services. The school nurse has the knowledge, skills, judgment, and critical thinking inherent in nursing education and authorized through nursing licensure to perform efficiently in the role as case manager.

Description of Issue:

In 1975, legislation was passed that mandated all children, including those with special health care needs, be educated with their peers. Since then, children with more and more complex health care needs have been attending schools throughout the United States (Gelfman, 2001; Glefman & Schwab, 2001). A partnership among health care providers, students, their families and the school system is essential to provide a smooth transition from home or hospital to school. To enhance this collaborative effort, it is essential for a school-based case manager to oversee the care provided on a case-by-case basis. The school nurse is the logical person to provide this oversight in the school setting, ensuring that the student has access to optimal health and educational success.

Rationale:

Case management is intrinsic to the school nurse's job. School nurses function in roles of community liaison, health and illness information interpreter to school personnel, direct and indirect care provider, student advocate, and educator to students, families, and school personnel. The school nurse is often the only person in the school setting with medical knowledge about the implications of a child's health status, knowledge of existing health care resources in the community, and understanding of how to access needed health services. The school nurse also has knowledge about the school environment and its potential barriers and facilitators to delivering health services and the provision for optimal educational opportunities.

Conclusion:

Case management of children with special health care needs involves various activities designed to ensure the health and educational success of the child at school. It is the position of the National Association of School Nurses that the school nurse has the knowledge, experience, and authority to be the case manager for children with special health care needs. This includes, but is not limited to, the following:

- Being knowledgeable about the services needed by students with special health care needs after collaboration with the student, family, and health care provider
- Being knowledgeable about services available in the community and assisting families in obtaining needed services.
- Screening for students who would qualify and benefit from case management services for their health care needs.
- Providing leadership in interdisciplinary team meetings to assist in planning needed services to meet the health and educational needs of the students.
- Implementing the health team's plan of care, by providing either direct or indirect care.
- Coordinating continuity of care between home and the school.
- Monitoring and evaluating interventions and implementation of the health care plan.
- Monitoring and evaluating progress toward identified health and educational goals.
- Training, monitoring, and evaluating personnel delegated to perform specific nursing care.

Source: National Association of School Nurses
(Revised Oct, 2002). For References, see website:
<http://nasn.org/positions/casemanagement.htm>

National Association of School Nurses

Position Statement

Medication Administration in the School Setting

History:

The safe and effective use of medications for the treatment of illness and disability has enabled many children to attend school. The school nurse has administered medications as necessary during the school day. The use of medications by students at school has increased dramatically over the last few years.

Description of Issue:

Major issues confronting the school nurse regarding the administration of medications include:

1. safe administration of the medications.
2. adherence to safe nursing practice, state nurse practice acts, and state laws and regulations.
3. ongoing monitoring of therapeutic benefits and side effects.
4. appropriate communication with the student, family, school staff, and health care providers.
5. proper documentation.
6. wide-spread emergence of “natural” and homeopathic remedies for self-limiting conditions.

Rationale:

School nurses provide direct nursing care to many students with illnesses or disabilities that can be cured or controlled with medication. The administration of medication should be delegated to assistive personnel only in those states where it is in compliance with the law. It is assumed that medication be administered during the school day when the interval between doses requires administration in school or the medication is a “when necessary” order. The school nurse, because of educational background and knowledge, is uniquely qualified to monitor and administer medication. While it is recognized that many families have chosen natural and homeopathic remedies over traditional treatment, it is recommended that the school nurse require that the use of these remedies follow all school policies for medication administration.

Conclusion:

It is the position of the National Association of School Nurses that school nurses administer medication safely and effectively under the following guidelines:

1. Adherence to school policies, school nurse standards of practice, state nurse practice acts and state laws.
2. The medication is in the original container if over-the-counter (OTC) or in a properly labeled prescription container, subject to Board of Pharmacy regulations. In some states, a licensed healthcare provider may package and label the medication.
3. Information on the container must include the name of the drug, dosage, route of administration, and the time interval of dose. Prescriptions must include the student’s name, and the name of the prescribing licensed healthcare provider.
4. The parent/guardian must request in writing that the medication be given at school.
5. The school nurse, based on nursing assessment, determines that the medication should be given at school.
6. The administration of medication in no violates nursing protocols or standing orders.

7. The school nurse is aware of and has access to current reliable information regarding the safe use of the medication including side effects and toxicity, possible drug interactions, and expected outcomes.
8. Medications are stored in a locked cabinet.
9. Procedures should be in place for receiving, administration, and accountability for all medications that are regulated by the Federal Narcotics Act.

School nurses may monitor the self-administration of certain medications (i.e. insulin, epinephrine, inhalers) using an Individual Health Care Plan. Written direction for student self-administration of medications must be obtained from the licensed health care provider and written permission from the parent/guardian. Guidelines must be developed for evaluation and monitoring by the school nurse. Self-administration must be permissible under state laws and school policy.

Source: National Association of School Nurses (1997).
Available online at www.nasn.org/positions/medication.htm

Missouri Revised Statutes
Chapter 167

Safe Schools Act

<http://www.moga.state.mo.us/statutes/C100-199/1670627.HTM>

Self-administered medication—requirements:

167.627. 1. Any board of education of any school district may permit the self-administration of medication administered by way of a metered dose inhaler by a pupil for asthma or other potentially life-threatening respiratory illnesses provided that:

1. The parents or guardians of the pupil provide to the board of education written authorization for the self-administration of medication and a written medical history of the pupil's experience with the potentially life-threatening respiratory illness and a plan of action for addressing any emergency situations that could reasonably be anticipated as a consequence of administering the medication and having the potentially life-threatening respiratory illness;
2. The parents or guardians of the pupil provide to the board of education written certification from the physician of the pupil that the pupil has asthma or another potentially life-threatening respiratory illness and is capable of, and has been instructed in the proper method of self-administration of medication and informed of the dangers of permitting other persons to use medicine prescribed for the pupil;
3. The board informs the parents or guardians of the pupil in writing that the district and its employees or agents shall incur no liability as a result of any injury arising from the self-administration of medication by the pupil, absent any negligence by the district, its employees or its agents, or as a result of providing all relevant information provided pursuant to subdivisions (1) and (2) of this subsection with the school nurse, absent any negligence by the district, its employees or its agents, or in the absence of such nurse, to the school administrator;
4. The parents or guardians of the pupil sign a statement acknowledging that the district shall incur no liability as a result of any injury arising from the self-administration of medication by the pupil and that the parents or guardians shall indemnify and hold harmless the district and its employees or agents against any claims arising out of the self-administration of the medication by the pupil; and
5. The permission is effective for the school year for which it is granted and is renewed for each subsequent school year upon fulfillment of the requirements of subdivisions (1) through (4) of this subsection.

(2) Nothing in this section shall be construed to prevent a school district from requiring pupils to maintain current duplicate prescription medications with the school nurse or in the absence of such nurse, the school administrator.

(3) The state board of education shall promulgate such rules and regulations as it deems necessary to effectuate the purposes of this section.

(4) No rule or portion of a rule promulgated pursuant to the authority of this section shall become effective unless it has been promulgated pursuant to the provisions of section 536.024, RSMo.